PULP & PAPER

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THE PRODUCTION AND MANAGEMENT MAGAZINE OF THE PULP AND PAPER INDUSTRY

FIRST PAPER SHIP OF 1954 to reach Chicago—3,978 tons of newsprint from Thorold, Ont., for *Chicago Tribune* . . . see page 6

VOLUME 55
NUMBER 5
MAY 1954

the difference is greater sizing efficiency with liquid CYFOR® Fortified Rosin Size

Liquid CYFOR Rosin Size gives new meaning to "sizing efficiency"—

a little size goes further:
you meet your medium or hard sizing specs at lower cost with less size.

you can meter liquid CYFOR
with greater accuracy—no weighing or guesswork; no dust, no cleanups.

less size in the sheets,
even in the hardest sized papers, means smoother machine operation.

As a result, mill after mill reports money saved by CYFOR in meeting exacting requirements with dependable uniformity. You can profit, too; ask your Cyanamid Technical Representative.

Recent Mill Developments With Cyanamid Paper Chemicals . . .

How To Break Up Wet-Strength Broke. This problem is being solved at many mills by heating the stock in a hydrapulper with the addition of small amounts of ALUM. Even tough laundry tag broke containing melamine resin is successfully repulped. Several mills which previously burned their wet-strength broke are realizing substantial savings by the use of this method.

* * *

A Smoother Latex Coating For Wrapping Paper has been made by the addition of ALWAX® 251-L Size. The mill used three parts rubber latex to one part ALWAX 251-L, applied to one side of the Kraft sheet... says the coating is 100% waterproof, highly resistant to scuffing and scratching, and feels pleasantly smooth.

* * *

Uniform And Reproducible Penescope Tests are often a problem in many mills. It has been found that when a 20% lactic acid solution is freshly prepared it contains a portion of lactides. These lactides, which give lower than normal sizing tests, increase as the solution ages. Thus, lactic acid resistance apparently decreases until a new batch of lactic acid solution is prepared. A method of pretreating the lactic acid solution to hydrolize the lactides has been developed. Solutions so treated are usable for many months. Your Cyanamid representative will be glad to give you details. ®Trade-mark

THE LARGEST VARIETY OF PAPER CHEMICALS, *to serve paper industry needs, is offered by Cyanamid, and is backed by the services of technically trained men with years of practical mill experience.*

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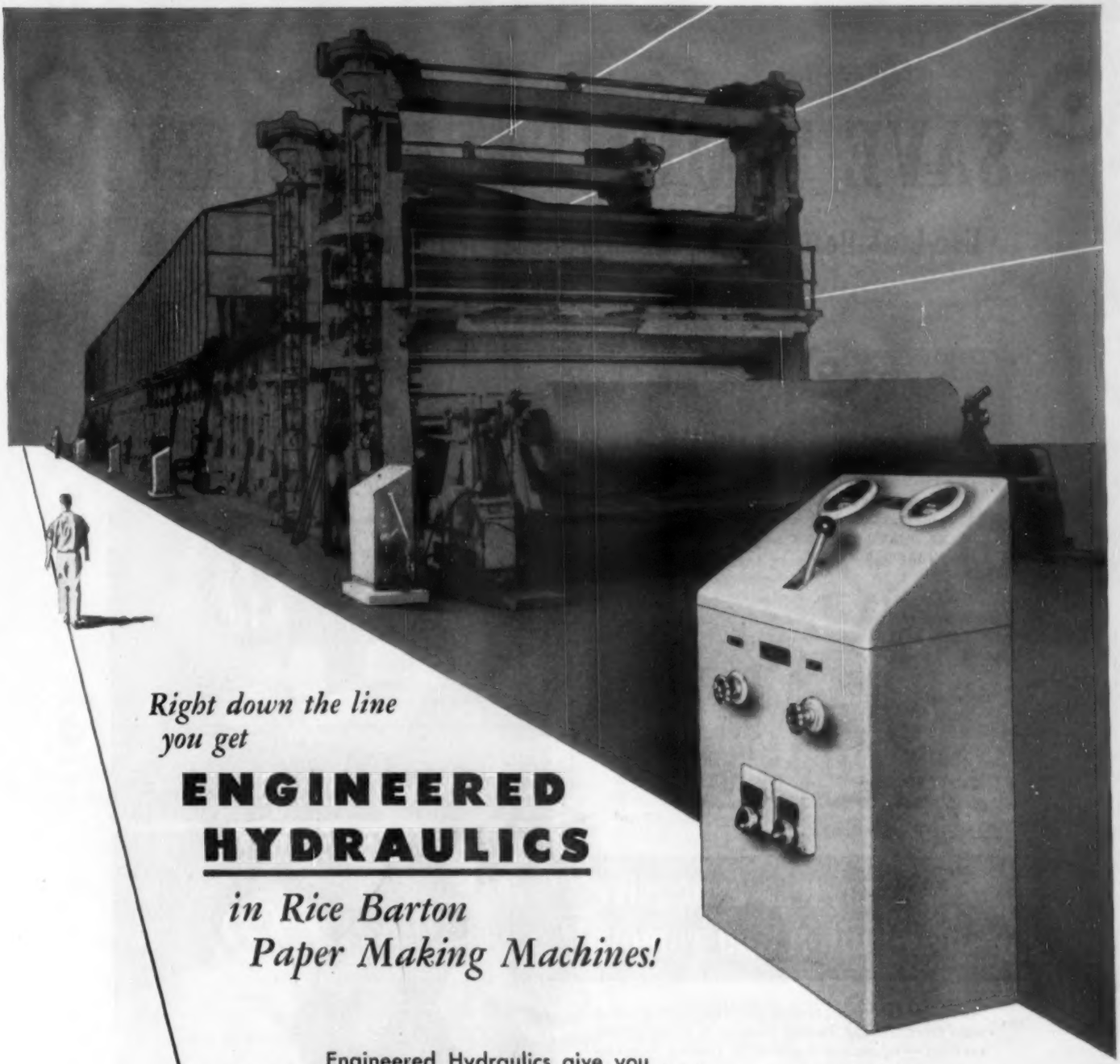

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Paper Making Machines!

Engineered Hydraulics give you . . .

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- Proper Application and
- Positive Interlocking of Functions.

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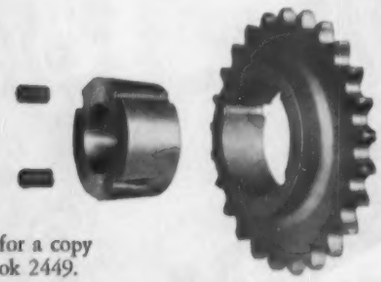
Use Link-Belt roller chain sprockets with taper lock bushings

Faster, less expensive procurement!

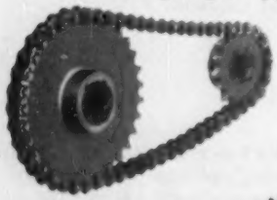
There's no delay for reboring when you need sprockets in a hurry. You can pick these *right off the shelf*. Stocks include sizes for single width chains from RC-40 through RC-160.



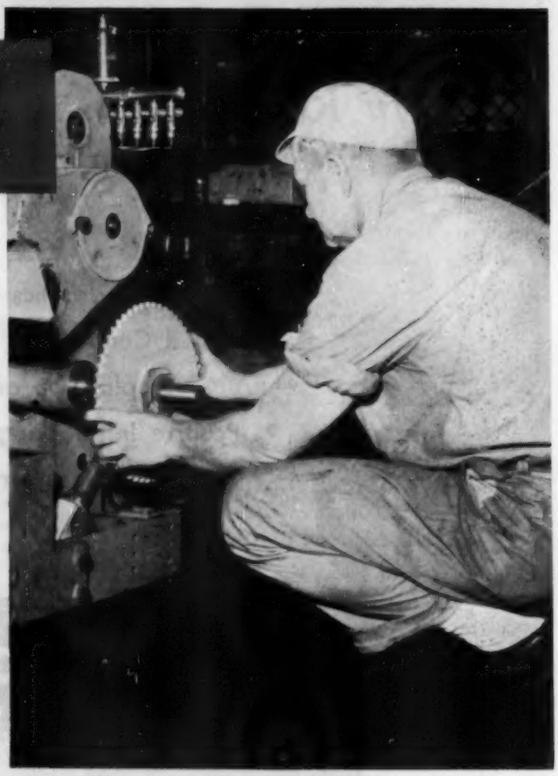
Send for a copy of Book 2449.

Faster, less expensive installation and removal!

No need to fit sprocket to shaft. Setscrews draw sprocket onto taper bushing, causing bushing to clamp tightly on shaft — equivalent to shrink fit. Turning setscrews in removal-holes quickly releases sprocket from shaft. Full bushing length supports sprocket on shaft.



AN IDEAL COMBINATION: Link-Belt Precision Steel Roller Chain and Link-Belt Sprockets



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PULP & PAPER

Production and Management Magazine of the Industry

May 1954
Vol. 28—No. 5

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COMMENT

Paper Made Kalamazoo A "Good-for-Living" City

Without pulpwood and without water power, how come Kalamazoo became the greatest quality paper producing area in the world?

Here's a theory advanced by an executive of one of Kalamazoo's eight paper companies in a recent interview with PULP & PAPER.

"Kalamazoo is just half-way between Chicago and Detroit, about 140 miles each way. The founders of Kalamazoo's paper industry—I like to think—were faced with a dilemma. For when they came here nearly a century ago, it was a big question which of the then booming young cities of Chicago and Detroit would forge ahead, and become the great center of the Middle West.

"Unable to decide which would be their great market, the Kalamazoo paper pioneers compromised on a midway point. Now history has revealed they did just right—for both Chicago and Detroit are now major paper consumers."

Another theory is that the rolling country, streams and lakes of Kalamazoo valley reminded the pioneers, who came from New England, of their former homeland. They picked Kalamazoo because they liked the landscape. This could be a reason, too.

De-inking was the basis of the first mill in 1866 and now is the backbone of this great center for book and printing papers. Five percent dividends per month and 50% stock dividends woke up a superintendent and a bookkeeper to the idea they might profitably build their own mills. And that is how Kalamazoo valley became the greatest producing area for quality papers in the entire world—and there is still no other city that can match its tonnage of high grade papers.

It is also the tulip and gladioli capital of the nation. Thousands of boxes of pansies are shipped from here every year.

It is home of a big drug plant, Upjohn, of a nationally famous producer of stoves, and of other plants whose products range from taxicabs to cigaret lighters.

It has a nationally known Civic amateur theater, an art center, an outstanding school system, 34 parks, two country clubs and is gateway to a great resort area and center of a veritable "lake country."

But the No. 1 income producer for this city of 60,000, and a "greater Kalamazoo" population now exceeding 100,000, is—*paper*. Paper and the kind of people who make paper were, and are, primarily responsible for creating a good city to live in.

Coating Is A Dynamic Field

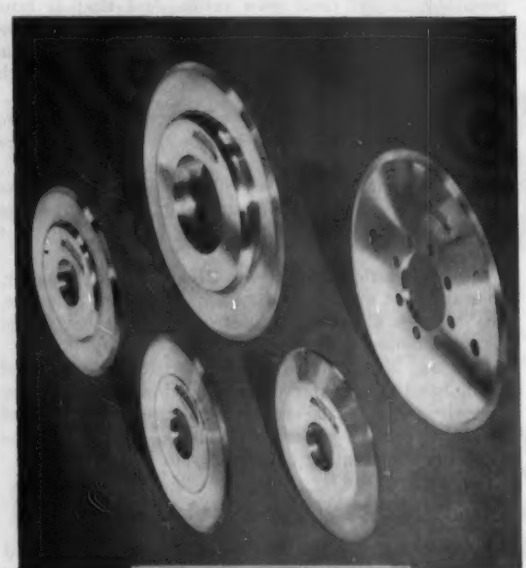
The coating of paper and, especially, of paperboard for boxes is one of the most rapidly developing phases of this industry's activities.

This will be evidenced at the annual technical meeting on coating in late May in Poland Springs. It is also evidenced by the series of Monday night meetings—lively discussions every one—held at Western Michigan College.

One of the most dynamic fields of activity in this industry is the coating field, and this activity will increase as imminent expiration dates are reached for some present successful processes.

SIMONDS FORGES THE STEEL

to make the cutting edge last



Experience proves "Red Streak" Forged Slitters maintain a smooth cutting edge longer than slitters made by any other method. Note the dense and uniform Simonds steel grain structure around the slitter rim. It's tougher, harder — won't flatten out or chip when operating against hardened steel rolls.

Scientifically heat-treated to just the right combination of hardness and toughness . . . precision ground to perfect roundness and close hole tolerances to fit standard holders . . . Simonds Forged Slitters give you the *smoothest, most dependable* cutting at lowest cost. Ask your Simonds Industrial Supply Distributor about "Red Streak" Forged Slitters with the longer lasting cutting edge.

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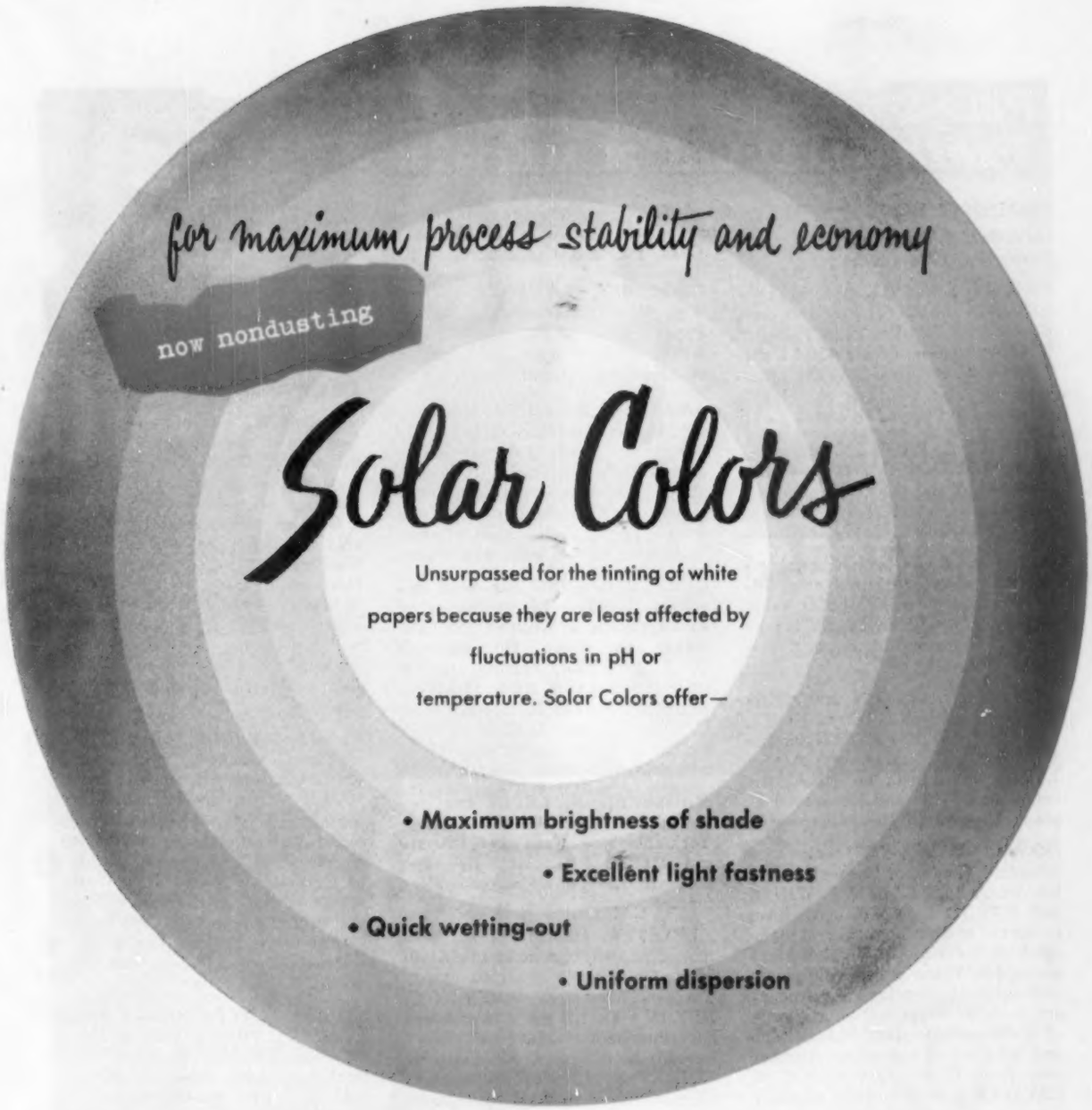
"Red Streak" SLITTERS


for maximum process stability and economy
now nondusting
Solar Colors
Unsurpassed for the tinting of white papers because they are least affected by fluctuations in pH or temperature. Solar Colors offer—
• Maximum brightness of shade
• Excellent light fastness
• Quick wetting-out
• Uniform dispersion

Solar Colors are now being delivered in a new nondusting, noncaking form which completely eliminates handling difficulties.

Solar Blues and Violets are available in a full range of shades which will produce tints of any possible hue for the brightest whites or coated papers with unexcelled color *performance*.

All these advantages are available at no extra cost.

Write for samples and technical information on the role of Solar Colors for tinting white papers.

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PULP & PAPER PERSONALS

NORTHEAST NOTES

New Board Members; Dempsey is New Supt.

DAVID L. LUKE III and *E. CRAWLEY WILLIAMS*, Jr. are two new directors of W. Va. Pulp & Paper Co. They succeed *FRED A. COE* and *HENRY F. HARRISON*. The latter was the first employe of original company and served 64 years.

THOMAS A. PRINTON, president, Nopco Chemical Co., is now also chairman of the board. He succeeds *CHARLES P. GULICK*, who has been designated honorary chairman.

DAN SCHOENHOLZ has been promoted to director of product development department, Foster D. Snell, Inc. *BERNARD BERKELEY* is now assistant director of product development department.

EVERETT C. REED is new assistant vice president, Albany Felt Co., according to *L. R. PARKER*, executive vice president. A graduate of Lowell Tech. Inst., he joined the company in 1939 and has served as plant manager of the Albany mill.

DONALD H. BREWER, senior vice president, Container Corp. of America, writes that *RALPH E. WHITE* and *DAVID R. RIGGS* have been promoted to divisional general managers of Indiana, Ohio and Eastern states. Mr. White will handle plants at Cincinnati, Cleveland and Anderson, Ind. Mr. Riggs will be in charge of Baltimore, Boston, Philadelphia and Wilmington operations. Another note from CCA: *FREDERICK S. CRYSLER* is new division manager of folding carton and boxboard properties at Boston, Philadelphia, Oaks, Pa., and Greensboro, N. C.

GEORGE V. JOHNSON, who was with WPB, CPA and the Writing Paper Mfrs. Assn., has joined APPA in New York in industrial relations and other activities.

ERHART K. DRECHSEL, formerly with the research division, has joined the market research department of American Cyanamid Co. A graduate of Drew University, he received a master's in organic chemistry from Syracuse U. His main interests have been in polymers and resins.

GERALD E. WING has been appointed manager of woodlands of Hollingsworth & Whitney northern woods operations. He succeeds *O. A. SAWYER*, recently retired after 48 years with H&W. Mr. Wing has a B.S. degree in forestry from U. of Maine and M.F. from Yale. He joined H&W in 1949 after being with Great Northern Paper

MARSHALL N. LEVIN has returned to Foster D. Snell's New York office as editor of their *Chemican Market Abstracts*, after two years in Europe as correspondent for the journal.

ALBERT W. DEMPSEY has been named superintendent of the Keith Paper Co. division of Strathmore in Turners Falls, Mass. *WILLIAM C. BRYAN* takes his place as assistant superintendent of No. 2 mill, Woronoca, who in turn is succeeded by *ROBERT E. HOSMER* as assistant superintendent at West Springfield.

THE STORY OF OUR COVER PICTURE

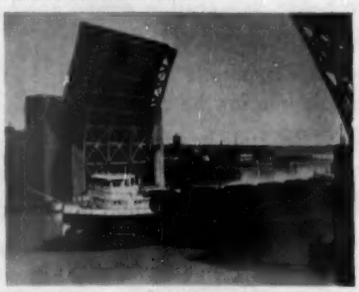
A new paper ship, *The Pic River*, was also the first paper ship of 1954 to reach Chicago.

It battled a blinding snowstorm in St. Claire River, near Port Huron, Mich., but was only a half-day late from the *Chicago Tribune*'s Ontario Paper Co. loading dock at Thorold, Ont. Entire voyage took just four days, three hours, 25 minutes.

In our cover picture (replica above) *The Pic River* enters Chicago River and sailed right up to the nearby *Tribune* dock and newspaper plant. The big wide bridge of Chicago's outer drive is raised to let it pass. In background is Navy Pier, which juts far out into Lake Michigan.

Lashed to deck of *The Pic River* can be seen 781 tons of newsprint. Below decks are another 3,197 tons.

The Pic River is a diesel ship, 385 ft. long, 44 ft. beam. It averaged 11.5 mph. *The Tribune* has nine other paper ships which in 1953 carried 161,800 tons (49 cargoes) of newsprint from *The Tribune*-owned mills at Thorold and Baie Comeau, Que.



REPLICA OF COVER PICTURE showing first paper ship of 1954 to reach Chicago.

H. A. DES MARAIS, newly affiliated with Geigy Chemical Corp.

Des Marais Joins Geigy

Hubert A. ("Gob") Des Marais has joined the industrial chemical division of Geigy Chemical Corp., New York, as manager of the division.

Mr. Des Marais recently was general sales manager of Penn Salt of Washington. He is a graduate of Dartmouth (1926), and first worked in Eastern paper mills, becoming superintendent of a Holyoke (Mass.) mill. For many years he was technical sales manager for General Dyestuff, making his headquarters in San Francisco.

G. LAMONT BIDWELL, JR., plant manager of Riegel's Milford mill, was saluted as "Papermaker of the Month" recently in Noble & Wood's magazine, *The Agitator*. Mr. Bidwell, a fifth generation papermaker from Riegelsville, N. J. and a graduate of Cornell U., joined Riegel after apprenticeship with Alliance Paper Co., Merritton. Ont. In 1953 he was loaned to an English firm to teach techniques of glassine manufacturing.

STUART W. MCLAUGHLIN, comptroller, W. Virginia Pulp & Paper Co., and *NELSON T. HAMPSON*, treasurer, Lowe Paper Co., Ridgefield, N. J. were recently elected directors of the Controllers Institute of America.

OSCAR E. ANDERSON heads international Paper Co.'s new service department. He was assistant manager of their Otis mill, Livermore Falls, Me. *LAMAR M. FEARING*, sales manager, says the service department will assist the sales and manufacturing divisions by working closely with customers. Mr. Anderson, graduate chemist of U. of Wisconsin joined Continental Paper & Bag Co. and has been with IP since they purchased Continental in 1927.

FRED B. STIEG, recently in Rayonier's sales department concentrating on paper pulp sales, retired after 20 years with the company.

Continued on page 10

IF FOAM IS A PROBLEM...

switch to low-foaming, high-efficiency MERSIZE

Typical trouble spot—foam at the headbox

Where foam can be a problem:

BEATER SWELLING
FOAM AT THE SCREENS
FOAM IN THE HEADBOX
FIBER FLOCCULATION
STOCK PUMP BINDING
FOAM IN THE WIRE PIT
FOAM IN THE VATS
FOAM AT THE SAVE-ALL
FOAM AT THE MIXING BOX
FOAM AT THE SEAL BOX
FOAM SPOTS IN THE PAPER

MERSIZE reduces foam at all these points

Production-hindering foam problems can occur at many points in the papermaking process — troublesome problems that are often caused by sizes with a high foam index.

If you would like to reduce foaming and, at the same time, get all the benefits of high sizing efficiency and low sizing cost, switch to low-foaming Mersize.

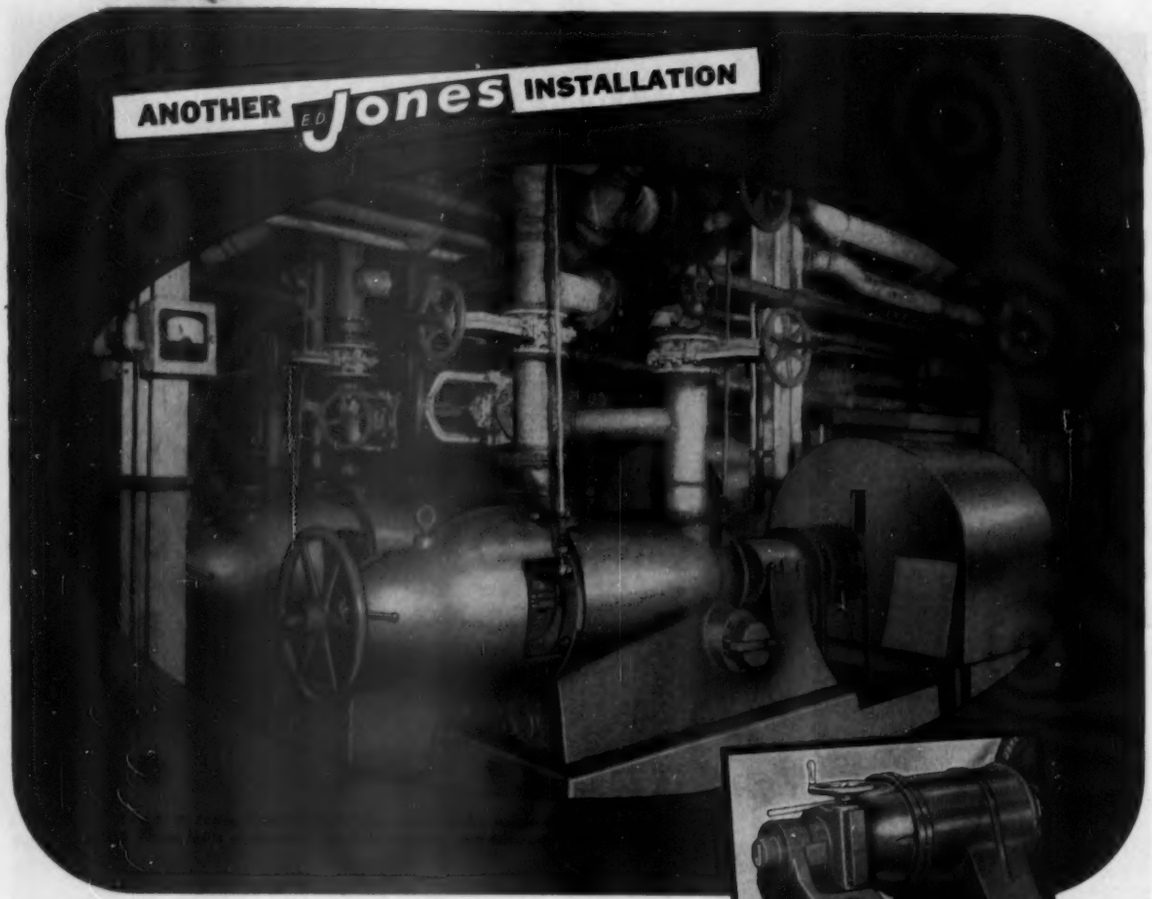
The advantages of Mersize have earned it acceptance by a large number of leading mills. To learn just how much it will improve your sizing operation, order a tank car today from MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 800 North Twelfth Blvd., St. Louis 1, Missouri.

Mersize: Reg. U. S. Pat. Off.

MONSANTO

SERVING INDUSTRY . . . WHICH SERVES MANKIND

ANOTHER E.D. Jones INSTALLATION



30 tons per day per unit on screenings

That's the production of these two Fibremasters at Anglo-Canadian. Rugged machines for rugged work. Power usage only 160 HP per unit. Freeness drop from 750 cc to 500 cc (CSF).

The Fibremaster, though it requires relatively small floor space, has twice the capacity of the well-known Jones High-Speed Refiner — without sacrificing any of the features that have made the smaller machine so popular.

As a general utility unit, on all stocks from news to rag, the Fibremaster combines flexibility, improved stock control, low power and maintenance cost. Ask your Jones representative or write for Bulletin No. 1035.

Now available with ACCRU-SET® automatic plug adjustment

This latest triumph of Jones engineering provides completely automatic, completely reliable control of plug adjustment for uniform, pre-determined treatment throughout your run, less operating horsepower, adequate protection for plug and shell fillings if power or stock flow fails. Easily installed on any Jones Jordan, Fibremaster, Stockmaster or Refiner. Write today for our Bulletin No. EDJ-1057.

E.D. Jones

E. D. JONES & SONS COMPANY
PITTSFIELD, MASSACHUSETTS

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

first cousin to magic

Equip that old dryer with the correct Fulton Drainage system and you'll be as quick as others to call the benefits magic.

Increase drying capacity 10% to 30% . . . Dry the sheet uniformly clear across . . . Hold moisture content more even . . . Eliminate excessive shrinkage, cockling, curling, wet streaks . . . Reduce breaks and broke losses . . . Cut steam costs at least 10%.

Since any one of two of these benefits alone justify the installation of Fulton Systems, is it any wonder that all recently built machines have Fulton Systems?

Is it any wonder that operators of old machines or small machines now "see the light" and are installing Fulton Systems as fast as we can engineer them?

Cost—less than you think . . . Get the facts now and decide now.

MIDWEST-FULTON MACHINE CO.

918 WOODLEY AVENUE • DAYTON, OHIO

PULP & PAPER PERSONALS — Continued

FROM THE SOUTH

Supt. at Pt. Wentworth; New Men in Atlanta

MACK A. HIGDON, tour foreman, has been promoted to superintendent of Southern Paperboard Corp., Port Wentworth, near Savannah, Ga. He joined the company in 1948.

JOHN E. ROGERS, an ordained minister with Associated Pentecostal Churches, has been promoted to tour foreman at Port Wentworth.

J. A. DICKSON, educated in South Carolina schools and an army major overseas in the World War, is new district mgr. for Southeast in Atlanta for Steel Strapping Div., The Stanley Works, New Britain, Conn.

"JAY" CRITTENDEN, paper mill superintendent for Bowaters Southern Paper Corp., Calhoun, Tenn., left many sorrowful friends in his sudden death in England during January. He brought Bowaters a fine reputation won at Southland Mills and Coosa River Newsprint Co.

COATED
LEDGER
INDEX
NOTE
TABLET
OFFSET
NOTION BAG

FOLDER
ONION SKIN
OYSTER PAIL
DRAWING
SAFETY

INSULATING
NOVEL
CORRUGATED

CLINTON

STANDARDIZED STARCHES

FOR USE IN THE MAKING OF HIGH-GRADE PAPERS AND BOARDS

CLINTON FOODS INC.
Corn Processing Division
CLINTON, IOWA

ON WEST VA. BOARD

TWO NEW DIRECTORS of West Virginia Pulp & Paper Co. are DAVID L. LUKE III, (left) Vice President, and E. CRAWLEY WILLIAMS, JR., (right) Resident Manager, Covington, Va., since 1951. Mr. Luke maintains liaison with Brazil and Hinde & Dauch subsidiaries and has other management duties.

ARTHUR J. STOCKSLAGER, has joined the Atlanta sales office of Reliance Electric & Engineering at 427 Candler Bldg., reporting to *EMORY G. ORAHOOD*, Southeast district manager. He is a Duke U. graduate. *WALTER A. THORNE*, graduate of Toronto U. and Harvard business, joins the staff under *FRANK A. DENISON*, Southwest manager at 1103 Sterling Bldg., Houston, Tex.

G. C. BAYLES is manager and *C. W. BRITT* his assistant in a new Elliott Co. sales office at 256 Lee Circle Bldg., New Orleans. They were in the Atlanta office. *F. L. HUMPHREY, JR.* is new asst. district mgr. in Atlanta for Elliott.

NEW MACON-ROME LINEUP

CAPT. HERBERT A. KIDD (left), who moves to Rome, Ga., for opening of new Rome Kraft board mill there, and announces new lieutenants in charge at Macon, Ga.:
JAMES A. MAY (middle), named Resident Mgr. at Macon. He was Asst. to Capt. Kidd, V. P. and General Mgr. of both Macon Kraft and Rome Kraft Cos.
WILLIAM M. EBERSOLE (right), promoted from Gen. Supt. to Mgr. of Production at Macon.
Capt. Kidd is also Vice Pres. of The Mead Corp., joint owner with Inland Container of the Ga. companies. Mr. May was born in Coalton, O., and attended Ohio U. and worked with Mead. Mr. Ebersole was born in Birmingham, Ala., graduated from U. of Alabama and was with St. Joe and Gulf States.

Continued on page 14

For makers of Quality Papers

ASTRACEL

BLEACHED HARDWOOD SULPHATE

Bleached With

CHLORINE DIOXIDE

This is a perfected bleached hardwood sulphate ... made from carefully selected species of southern hardwood trees which yield the longest and finest hardwood fibre available. Astracel has the excellent forming qualities found in northern hardwoods ... *plus great strength.* It is produced at Riegel Carolina's new pulp mill at Riegelwood, N. C., with every refinement and control known to modern pulp manufacture.

Riegel Carolina Pulps

ALBACEL • SUPER ALBACEL • ASTRACEL

Created by Papermakers for Papermakers

RIEGEL PAPER CORPORATION • 260 MADISON AVENUE • NEW YORK 16, N. Y.

it's OK let'er go!

Photo courtesy of
The Todd Company, Inc.,
Rochester, N. Y.

"Wearing qualities of OK SUPER paper trimming knives are excellent - we are satisfied with performance"

—reports The Todd Company, Inc., Rochester, N. Y.

This famous Company, the nation's leading supplier of safety checks, etc. to the Banking Industry use Ohio Knives on their paper trimming machines to insure supreme accuracy in trimming . . . to deliver longer runs without regrinding. Actual tests have proven OK Knives deliver 25% to 40% longer service. Made of the finest alloy steel, OK Knives are specially hardened to stand the heaviest cutting and still hold an ultra keen edge.

They are beveled and hardened for practically all types of cutting. For unusually tough jobs like trimming aluminum foil, cellophane, glued board, rubber, plywood, etc. OK Knives are available in special bevels and hardness.

Dept. F

Manufacturers
of
OK SLITTER KNIVES
CHIPPERS
TRIMMERS
REVOLVING CUTTERS

GO WITH OHIO GREEN

THE OHIO KNIFE CO.

CINCINNATI 23, OHIO

Water Economy with EMERSON SHOWER PIPES

With the Emerson Shower Pipe you can re-use processed water containing solids, thereby cutting water costs with proper cleaning action. The Emerson is equally adaptable for use with fresh water assuring maximum cleaning with minimum water consumption.

Here are the exclusive features of the Emerson Shower Pipe:

An ingenious mechanical nozzle cleaning device (individual stainless steel replaceable brushes) which automatically keeps openings free of foreign matter.

When brushes are in the openings of the nozzles an internal flush valve synchronized with the movement of the brushes opens to flush out the pipe from end to end. When the brushes pass the openings the valve closes.

Replaceable nozzles of stainless steel, nitralloy or carballoy to meet all conditions.

Custom-made for specific mill uses in pipe sizes of 1½", 2", 2½", 3" and 4". The Emerson Shower Pipe is recommended for use on Fourdrinier wires, felts, cylinder molds, rotary screens, thickeners, washers, grinding stones, wet machines, for foam killing and humidifying, and for special applications.

Call or write for further information about Emerson Shower Pipes.

The Emerson Manufacturing Co.

Division of John W. BOLTON & Sons, Inc.

Lawrence, Massachusetts, U. S. A.

MIDDLE WEST NOTES

News of the Beckwiths; Dean Changed Names

W. H. BECKWITH, v.p. and gen. mgr., Morris Paper Mills, Morris, Ill., and son, *BOB*, personnel mgr., earned a respite resting on Miami Beach. But his other son, *TOM*, purchasing agent, was saving up for trips to his fishing cabin at Hayward, Wis., and maybe to sample Pacific Coast salmon fishing. Morris Mills own a piece of Spaulding sulfite mill in Oregon, and big air views of that mill grace two Morris offices.

ROY A. MEUNIER, for many years supt. at Morris Mill, hails from Wisconsin Rapids. He plans to take his wife and 16-yr.-old daughter to Montreal meeting of Supts. Assn.

GLEN STEWART, ad. mgr. of KVP, completed term recently as Kalamazoo Rotary Club president.

JAMES ARTHUR DEAN, technical director at Michigan Paper Co., has only been "Art" since he arrived at Plainwell, Mich., back in '43. He was "Jim" while at Madawaska, Maine, where he came from, and it was just an accident that his "calling" name changed.

TERRY HOLLERN, widely known in Midwest mills where he formerly toured for Powell River pulp, reports he likes his new assignment in Los Angeles for Powell River sales; and Angelenos are finding out that he shoots golf in the low 70's and like all scratch golfers, is a hard man to deal with on first tee. *RON MELVIN*, who also learned pulp in the B. C. mill, is Terry's capable successor in the Midwest.

STEPHEN GARDNER, son of Executive Vice Pres. *COLIN GARDNER*, is administrative assistant to the director of public and industrial relations for Gardner Board & Carton Co. He graduated from Yale and joined Gardner in 1952. *IRVIN J. HURR*, son of Gardner's accounting supervisor, *IRVIN G. HURR*, is new estimating supervisor.

ARTIE LAKES, boss machine-tender for No. 1 paper mill of Champion Paper's Hamilton, O. Division, is also a master gunsmith. Born in Kentucky mountains, he probably comes by his hobby of building guns naturally. He has completely equipped gun shop in his home.

HORACE T. POTTS II, 5th generation of family to head Potts firm in Philadelphia which makes Speedline fittings for this industry.

Potts Firm Incorporates

Horace T. Potts Co., Philadelphia, manufacturer of Speedline fittings for pulp, paper and process industries and distributor for prominent steel makers, announces its incorporation as Horace T. Potts Co. The firm, founded in 1818, has been operating as a partnership.

Horace T. Potts II, general manager under the partnership, is president of the new corporation. Directors are Arthur L. Collins and Edward R. Potts, vice presidents, John A. Stringer, controller, and John W. Reckard, sales manager.

Continued on page 18

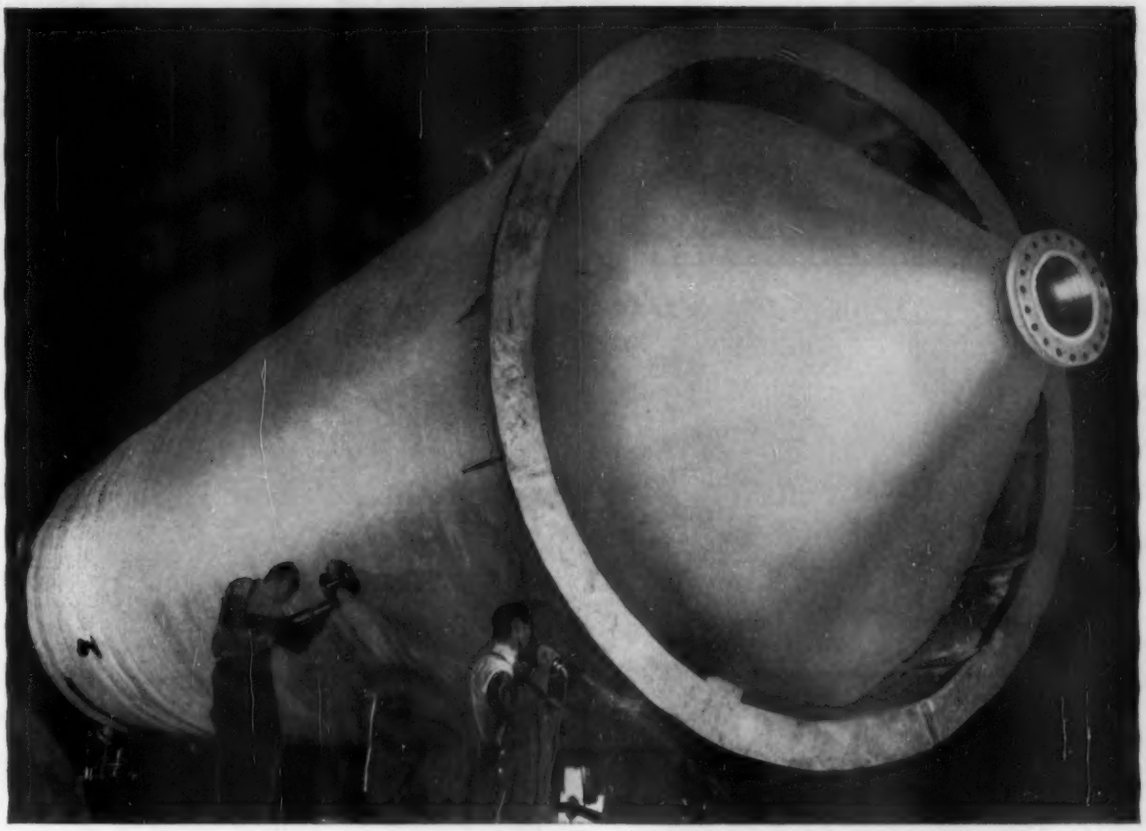
You can divide all the accomplishments of the Deculator into two groups—those that are an aid to production, those that improve the quality of the product.

So, wherever you place your emphasis, the Deculator may be the answer to greater realization of your objectives. We'd like to tell you how the Deculator is paying its way and paying a profit in many other mills.

THE ROTAREAED CORPORATION *represented by*

CLARK & VICARIO CO.

Bronxville, N. Y.



Pulp digesters to improve the quality of tires

Installed in new plant to produce Chemical cellulose for Rayon cord

This is one of six, four SMITHlined and two clad digesters made by A. O. Smith for the new Rayonier Incorporated, Jesup Division installation.

It will produce chemical cellulose for rayon cord that will form casings for more economical, longer lasting automobile tires.

Lined with type 316 ELC stainless steel, these digesters are 12 feet in diameter, 55 feet high and are completely shop fabricated at our Milwaukee works.

A. O. Smith engineers have worked closely with Rayonier in the past. They assisted in designing, and built the world's largest digester for their Fernandina division, and supplied two for the Port Angeles, Washington, mill.

Now, when building a new plant, Rayonier comes, again, to A. O. Smith for digesters.

Close cooperation of our staff with members of the paper industry in solving digester corrosion problems benefits all concerned. This cooperation does not end with the installation of the vessel, but continues in the conduct of subsequent metallurgical inspections and the training of mill personnel to make their own inspections and to correctly evaluate vessel conditions.

If you are faced with corrosion problems arising from the use of pulping chemicals in digesters, we shall be pleased to assist you in solving them.

Your inquiry will receive prompt attention.

Through research ... a better way

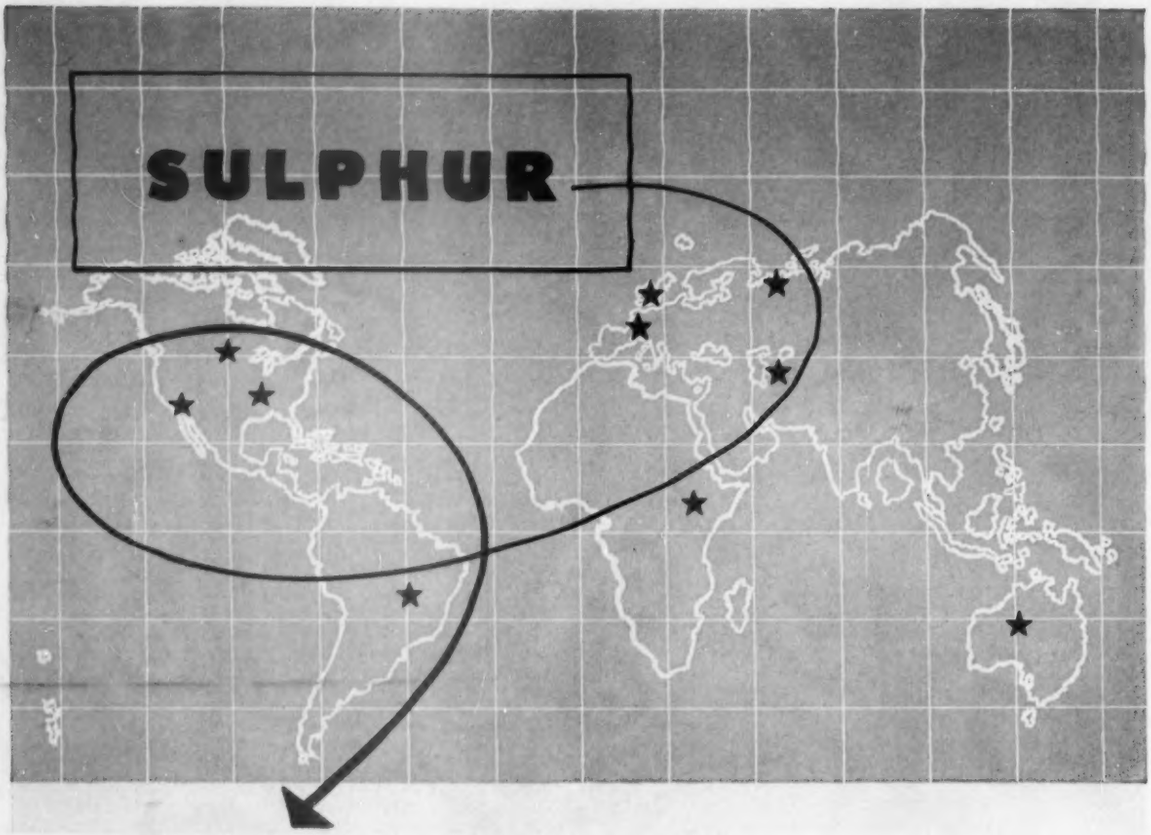
A.O.Smith

PROCESS EQUIPMENT DIVISION

Milwaukee 1, Wisconsin

Chicago 4 • Cleveland 15 • Dallas 2 • Houston 2
Los Angeles 22 • Midland 5, Texas • New Orleans 12
New York 17 • Pittsburgh 19 • San Francisco 4 • Seattle 1
Tulsa 3 • Washington 6, D.C.

International Division: Milwaukee 1
Licensee in Canada: John Inglis Co., Ltd.



the UNITED STATES *is only one producing country!*

Although the United States is the largest producer of elemental sulphur, its production is only about one-half of sulphur in all forms produced in the free world.*

Sulphides of iron, copper, zinc and hydrogen and calcium sulphate are all sources of sulphur dioxide, the starting point of the manufacture of that universal and all important chemical tool, sulphuric acid.

Elemental sulphur, per se, is essential for such compounds as carbon bisulphide, rubber vulcanizing and certain fungicides, insecticides and black powder. Economics dictate the use of the element or the sulphides or sulphate for other products and processes.

*International Minerals Conference, 1952-53

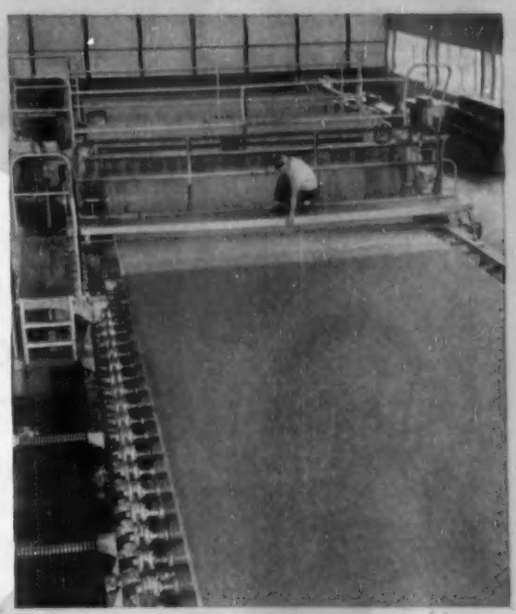
Texas Gulf Sulphur Co.
75 East 45th Street, New York 17, N. Y.

Sulphur Producing Units
- NEWGULF, TEXAS
- MOSS BLUFF, TEXAS
- SPINDLETOP, TEXAS
- WORLAND, WYOMING

CHEMICAL PROGRESS WEEK-MAY 1954

from pulp to paper

LEADERSHIP IMPLIES ABILITY



Ability to engineer out of sound experience and fabricate with precision.

Ability to ship on schedule, erect quickly and efficiently, start up smoothly.

Ability to perform at any spot along the way from pulping to converting.

That's what mill managements want—that's what they get when they choose Black-Clawson as their supplier.

THE BLACK-CLAWSON COMPANY

Hamilton, Ohio
Middletown, Ohio
Fulton, N. Y.

PERSONALS — Continued

MIDDLE WEST NOTES

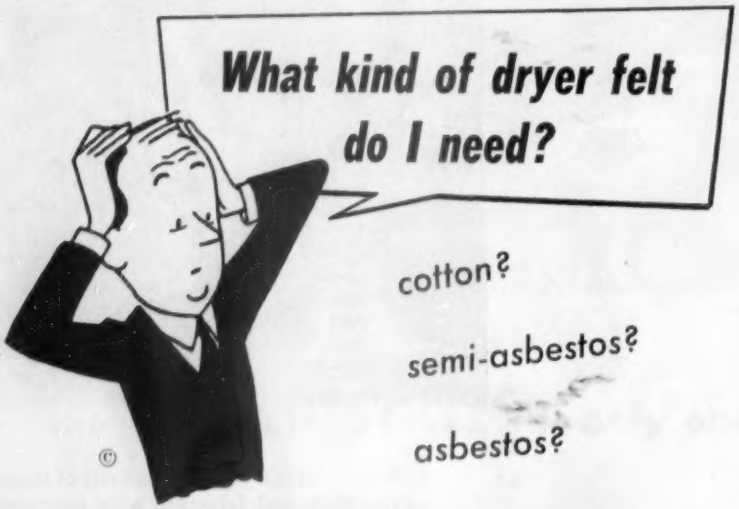
L. S. "BUD" FAHRNEY, machine accounting, Champion, Hamilton, O., is president of his city's Junior Chamber of Commerce.

CHARLES HAYS, No. 2 sorting supervisor, Hamilton mill of Champion, is president of Southwestern Ohio School Boards Association.

GEO. RENTMASTER was named converting floor supervisor and *NORBERT STORDEUR* succeeded him as converting tour foreman at Charmin Paper Mills, Green Bay, according to Gen. Supt. *R. E. KISSEL*.

DAVE WATSON, supervisor at Wisconsin Wire Works, Appleton, received a plaque in behalf of that company from its insurance carrier for not having a compensable industrial injury in 1953.

ALAN ADRIAN of Neenah Paper, was renamed to the Neenah, Wis., vocational and adult education board.



BRANDON MAKES ALL 3

So it's easy for us to recommend the best dryer felts for your individual needs

You'll find the perfect dryer felt to suit your special requirements in Brandon's complete line of dryer felts. Brandon has no reason to recommend anything but the correct dryer felt for your needs, because we make all three types—cotton, semi-asbestos, and asbestos.

For immediate attention to your dryer felt problems, write:

Brandon Sales, Inc.
Drawer L, Branwood Station
Greenville, South Carolina

Representatives:
Northern and New England States
Orton Corporation, Fitchburg, Mass.
Midwestern States
Frank Clawson, Kalamazoo, Mich.
West Coast
M. J. Maguire, Portland, Oregon
Southern States
R. S. (Bob) Davis, Greenville, S.C.

BRANDON DRYER FELTS

SOUTH FOR JACKSON-CHURCH; MIDWEST FOR HUYCK FELTS

J. D. HOMAN (left), who makes headquarters at 714 South Orleans St., Tampa, Fla., and is well versed in the paper industry, will represent Jackson & Church Co., Saginaw, Mich., in the Gulf States area. J & C makes Zenith dewatering screw presses and the Reto-pulper. Claude C. Beeman is Zenith Division Mgr., and Bruce Armstrong, Pulp and Paper Dept. Director.
C. WESTCOTT GALLUP JR. (right), of Middletown, O., who has joined sales staff of F. C. Huyck & Sons, Rensselaer, N. Y., and will represent them in Middle West. He was with Vanderbilt. Born in New Jersey, he attended St. John's College in Maryland, was a combat infantryman in World War II and won two purple hearts.

CARL F. WIEGMAN, beater engineer for the past 19 years at Thilmany Pulp & Paper, died Mar. 15.

BURTON E. JAMES, with Beloit Iron Works over 25 years, died in a Madison, Wis. hospital Mar. 22. He was 57. He was assistant chief engineer at Beloit.

FROM CANADA

Roberts Goes to Japan

M. J. FOLEY, executive vice president of Powell River Co., Vancouver, B. C., has been elected president of the Canadian Forestry Association, British Columbia branch. Members of the executive include *AXEL BRANDSTROM*, forester of Celgar Development Co.; *ROSS R. DOUGLAS*, woods manager, Alaska Pine & Cellulose; *T. G. WRIGHT*, chief forester, Canadian Forest Products; *L. MANLEY*, secretary-manager, CPPA; *C. B. DUNHAM*, director of forests, Canadian Chemicals & Cellulose Co. *H. J. HODGINS* is vice president.

LINK-BELT IN SOUTH

J. ROSS ARNOLD, new District Mgr. for Link-Belt Co. in Birmingham, Ala., succeeding HARRY G. ANDERSON, now D.M. in Newark, N. J. With L-B since 1937, Mr. Arnold graduated from Drexel Institute, attended U. of Penn B.A. School.

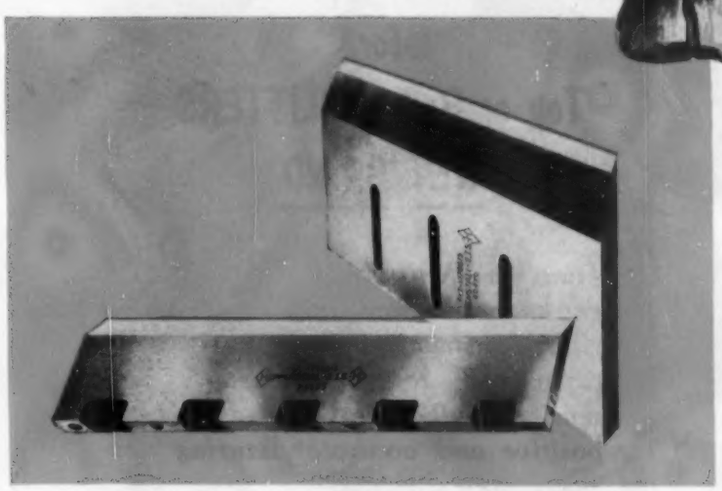
Continued on page 22

built for
rugged action

Heppenstall

CHIPPER KNIVES

***durable blades* for industry**



Many leading pulp mills make Heppenstall their standard specification for chipper knives. Heppenstall's record for durability provides such production advantages as:

- **MORE CUTS BETWEEN GRINDS**
- **LESS OVERSIZE CHIPS**
- **LESS DOWN TIME**
- **LOWER OVERALL BLADE COST**

The reasons may be found in Heppenstall's high standards for the development and manufacture of chipper knives. Made from high quality, electric induction steels, these long-lasting knives are famous throughout the pulp producing industry.

Make Heppenstall *your* standard specifications.

Heppenstall

The most dependable name in forgings

PITTSBURGH 1, PENNSYLVANIA

Sales offices in principal cities

HANCHETT *knife grinders*

for GRINDING - HOG - BARKER - PAPER TRIMMER and DOCTOR BLADES

for finest finishes

MODEL **AK**

EXTRA HEAVY DUTY
MECHANICAL OR HYDRAULIC
TRANSMISSION DRIVES

speeds: 10′ to 100′, 30′ to 150′ and faster
motors: 7½ h.p. to 40 h.p.
weights: 10 tons up to 40 tons
capacity: 84″ to 360″ and longer
drives: Mechanical or hydraulic head carriage for flat or concave bevel grinding

other models: GK — medium heavy duty — capacity 32″ to 184″
DN — normal production — capacity 32″ to 108″

Announcing the NEW

MODEL **SK-24**

SLITTER KNIFE GRINDER for Top or Bottom SLITTERS WET GRIND

- *finest finishes*
- *extreme accuracy*
- *rigid construction*
- *capacity 3″ to 24″ diameter*
- *semi or fully automatic*
- *positive and accurate fixturing*

HANCHETT MANUFACTURING COMPANY

World's Largest Manufacturer of Knife Grinding and Saw Sharpening Machinery

MAIN OFFICE — Big Rapids, Michigan WEST COAST — Portland 1, Oregon

THE MEAD SALES COMPANY
230 PARK AVENUE, NEW YORK 17, N. Y.
20 NORTH WACKER DRIVE, CHICAGO 6, ILL.

MEAD
pulp

DISTRIBUTORS OF WOOD PULP
BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP

They say farmers hundreds of miles away heard Paul Bunyan's mighty voice when he shouted, "Hey, you farmers! Grow trees, I say." And all who heeded him prospered from it—for there's money in trees.

A reproduction of this incident from the fabulous life of Paul Bunyan—the seventy-sixth of a series—will be sent on request. It will contain no advertising.

CANADA NOTES

PAUL E. ROBERTS, general manager, Alaska Pine & Cellulose Ltd., Vancouver, B. C., formerly manager of new development for Abitibi Power & Paper Co., flew to Japan in April on a Board of Trade mission to study Far Eastern economic conditions.

DR. GORDON A. NICHOLLS has returned to New Zealand via Canada with his wife from London to join the staff of N. Z. Forest Products Ltd. as research chemist. An Aucklander, Dr. Nicholls studied at the University of Rochester, N. Y., on scholarship.

ROBERT H. (BOB) SCANLON, director of Powell River Co. since 1927, has joined the company's 25-Year Club. A son of the late *M. J. SCANLON,* one of the founders of the company, Bob went to Powell River in 1910 and he was townsite manager, later assistant resident manager, and now headquarters in San Francisco.

ERNEST (DAD) KETCHUM, who retired as groundwood superintendent of Powell River Co. in 1940, liked Powell River so well that he decided to stay there and today, at 85, he is an active figure in the community. He started his career with the old Willamette Pulp & Paper Co. in 1896. *BRUCE ZUMWALT,* who was then general superintendent at Powell River, persuaded him to join the British Columbia company back in 1912.

PACIFIC COAST

Perrin Tours East; Ray Brown Goes to Texas

ANDY PERRIN, West Coast sales manager for Reliance & Electric Engineering Co., made a one-day stop in Chicago recently to see his former chief, Rudy Herbig, Midwest manager, and his mother, who lives in Evanston, Ill. Andy lives at 122 Second Ave., San Mateo, Calif.

BILL KASCH, shift foreman at Weyerhaeuser's Everett pulp mill, was named Everett's Man of the Year in Sports for the last year at a big city affair. Jim Phelan, former football coach at Purdue and Washington, presented the trophy.

GEORGE DRAKE, vice pres. and woods manager for Simpson Logging Co., is retiring May 1. *CLYDE MARTIN,* Weyerhaeuser forester, is also retiring, and the two of them are planning to set up a forest management business. Mr. Drake plans a European trip to look into possible work there.

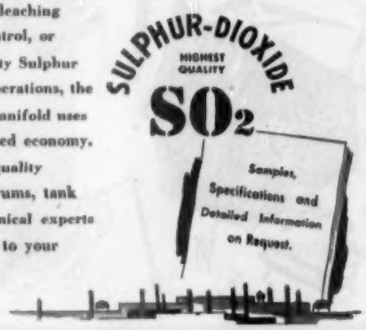
A NEW GILBERT PRESIDENT

THEODORE M. GILBERT (left) has succeeded GEORGE M. GILBERT (right), as President of Gilbert Paper Co., of Menasha, Wis. Both are third generation to head the company which their grandfather founded. GEO. GILBERT has been President since Jan. 1951 and continues as Director. TED GILBERT has been Vice Pres. since 1947.

Continued on page 26

SOLVING MANY PROBLEMS!

Perhaps your industry has a particular process that requires a superior reducing or bleaching agent, preservative, antichlor, pH control, or neutralizer. Tennessee's highest quality Sulphur Dioxide will fit the need. In most operations, the use of this chemical (SO_2) with its manifold uses results in more efficiency and increased economy. We can supply Tennessee's highest quality Sulphur Dioxide in cylinders, ton drums, tank cars, and tank trucks. Let our technical experts show you how you might employ it to your greatest advantage.



- Cylinders
- Ton Drums
- Tank Trucks
- Tank Cars

TENNESSEE TC CORPORATION

617-29 Grant Building, Atlanta, Georgia

Asten DRYER FELTS

Idle gossip?

Men who work with ASTENS swear by them for their long life—at top speeds. Sometimes it pays to lend an ear.

Economy in the long run

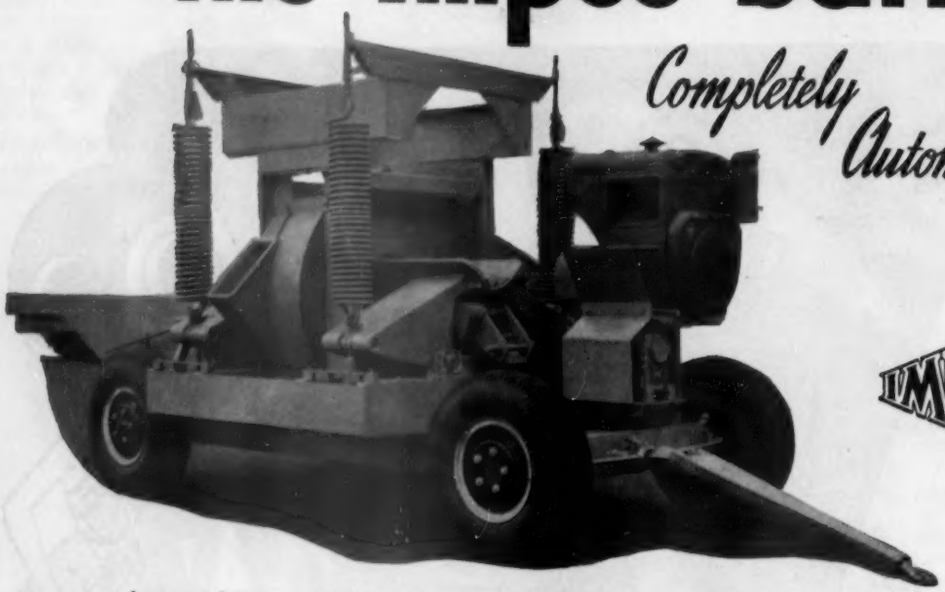
ASTEN-HILL MFG. CO.
PHILADELPHIA, PENNA.

ASTEN-HILL LIMITED
VALLEYFIELD, QUEBEC

Introducing

the Impco barker

Completely Automatic



IMPCO

Easily handles irregular shaped logs!

The Impco Barker has been developed to meet today's high bark removal requirements combined with low wood loss.

It is available as a stationary unit for general wood yard barking or as a portable unit mounted on a heavy frame equipped with tires for highway towing. The mobile unit can be furnished with a self-propelling drive for moves between barking sites.

Capacities up to 20 cords per hour depending on conditions, size and type of wood can be expected.

SPECIFICATIONS:

Wood size—4' to 8' in length
4" to 18" in diameter
Feed Rate—30 to 120 f.p.m
Infeed and Outfeed Conveyors—Automatic, self-centering, self-sizing
Barking Tools—6 springloaded—automatic sizing for variable log diameters
Bark Discharge—Mechanical ejection
Drives—Gasoline or electric powered

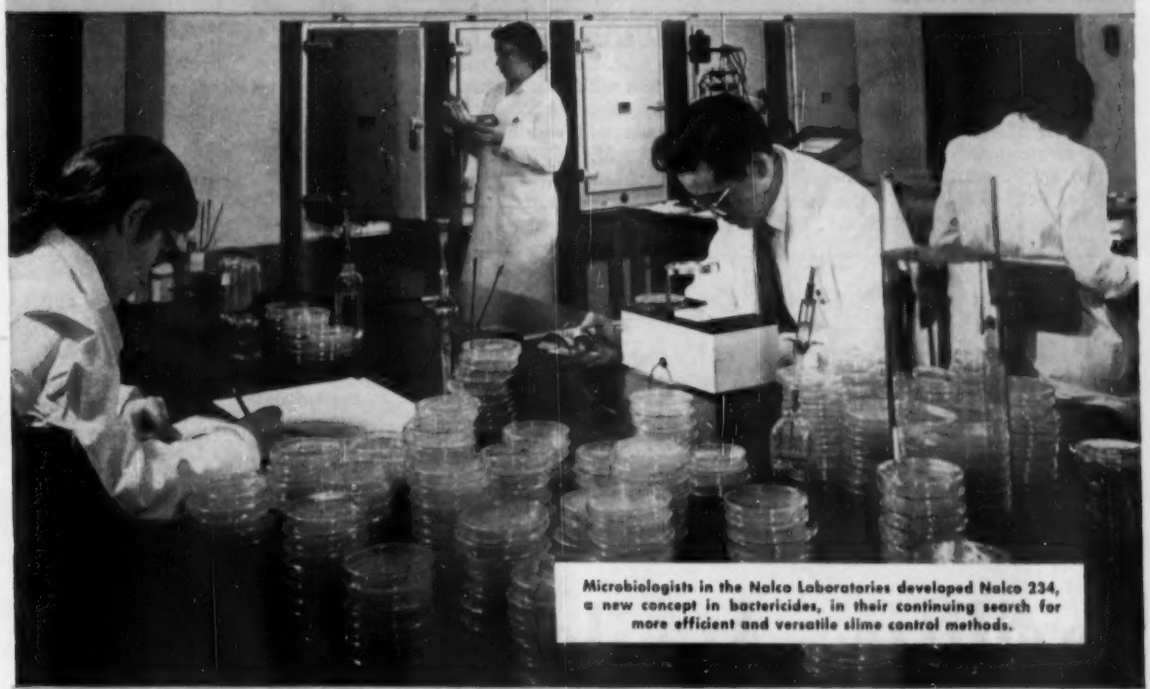
IMPROVED
MACHINERY INC.
NASHUA, NEW HAMPSHIRE

Sherbrooke Machineries Limited, Sherbrooke, Quebec Manufacture similar equipment in Canada

F 1-a

An Entirely New CHEMICAL

NON-MERCURIC • NON-PHENOLIC



Microbiologists in the Nalco Laboratories developed Nalco 234, a new concept in bactericides, in their continuing search for more efficient and versatile slime control methods.

Fast Action SLIME CONTROL

with *Nalco* 234

NALCO 234 is a new organic liquid formulation, developed and proved to meet an industry-wide need for a *quick-killing, non-odorous* bactericide for maintaining clean systems in all types of papermaking—including food packaging and sanitary papers.

Combining the advantages of excellent slime control with powerful dispersing action on fibrous and gelatinous masses in machine systems, Nalco 234 reduces breaks on machines, decreases total down time, and helps produce a more uniform sheet.

Write Nalco, or call your Nalco Representative for full data on fast-action Nalco 234.

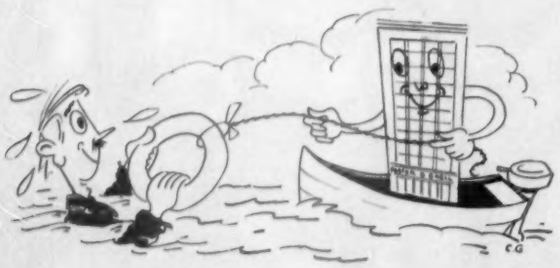
NATIONAL ALUMINATE CORPORATION
6213 West 66th Place • Chicago 38, Illinois
In Canada: Alchem Limited, Burlington, Ontario

THE NALCO SYSTEM
Serving the Paper Industry through Practical Applied Science

PACIFIC COAST NOTES

L. G. WILLINS, Everett kraft superintendent for Weyerhaeuser, has entered the ranks of home owners by the purchase of house in Everett. *EUGENE ELLIS* has been added to chief electrician *NORM RAYNER's* staff as electrical engineering trainee. *JOHN HOUK* is the new pipefitting and yard foreman.

RAY BROWN, since 1935 pulp mill superintendent at St. Helens Pulp & Paper Co., St. Helens, Ore., resigned effective Apr. 1 to accept same title and position with East Texas Pulp & Paper Co., Evadale, Tex. He and Mrs. Brown will reside at Silsbee, Tex. *PHIL. M. SCHNABEL*, previously assistant pulp mill superintendent, was promoted to superintendent at St. Helens.



Facilities Available

for the Determination of

BY-PRODUCT MANUFACTURING

and

WASTE UTILIZATION!

By virtue of its association with all industries, the independent research laboratory and its technicians are in a most favorable position to study your by-product development and waste disposal problems to your benefit.

There are specialists versed in solving such problems for all industry, with specific pulp and paper activities. This coordinated experience can be most effectively utilized in the meeting of your individual needs.

Inquiries invited—initial consultation involves no cost or obligation.

Research Facilities at Costs You Can Afford

RESEARCH LABORATORIES

FOSTER D. SNELL INC.

29 WEST 15th ST. NEW YORK 11, N.Y. — WA 4-8800

CHEMISTS • ENGINEERS

HOME OFFICE, PACIFIC COAST REGIONAL MEN GET TOGETHER

TOP PAIR are HUGH NICKLE (left), who left key post in New York for Combustion Engineering Inc., few years ago to take over vital Pacific Northwest District Managership, offices in Seattle, got together with VINCENT OWEN (right), who is Manager of Pulp and Paper Industry Sales for Combustion, New York City. They looked over new C.E. installations in west.

LOWER PAIR are MILTON MAGUIRE (left), Pacific Coast manufacturers' representative who bases in Portland, Ore., and A. E. JOHNSON, Technical Supervisor of Curlator Corp., East Rochester, N. Y. Mr. Maguire represents Curlator and other mill equipment in Far West. One of most recent Curlator installations was ahead of big new high speed tissue machines at Scott Paper Co. mill in Everett, Wash.

O. E. LARSON, Emerson Mfg. Co., was principal speaker at a Paper Makers & Associates dinner in Los Angeles. *T. S. MARKOV* presided.

E. A. PIERCE has been appointed production superintendent in charge of Johns-Manville Products Corp., Pittsburg, Calif.. paper mill operations. He takes the place of *L. BARDSLEY* who has been assistant superintendent and superintendent for 26 years, and is retiring. *MR. PIERCE* was first employed as a machinetender at the Waukegan, Ill., plant, transferred to Pittsburgh in 1929.

HOLDS 2 BRITISH POSTS

RALPH C. HEYES, Managing Dir., Millspaugh Ltd., Sheffield, Eng., recently elected Pres. of Paper Makers Allied Trade Assn. in Britain. He is also Chairman of Paper Machinery Makers Assn. of Britain—first man to hold both posts. Millspaugh represents American equipment, too.

Continued on page 30

for pastel blue

CHEMICAL PROGRESS WEEK-MAY 17-22

A BETTER AMERICA THROUGH CHEMICAL PROGRESS

...tinting, too!

PHENO SKY BLUE 6BX CONC.

This direct dye gives excellent results in tinting white shades and in producing pastel blues. It offers good bleed resistance and chemical stability, and is generally preferred for papers destined to come in contact with alkali.

In conjunction with Chrysophenine ESN Ex. Conc., Pheno Yellow 3GX Conc. or Pheno Fast Yellow 3AP Conc., PHENO SKY BLUE 6BX CONC. produces the bright greens which, in addition to the clean blues, are preferred for napkins, toweling, tissue and waterleaf grades.

Calco®

AMERICAN Cyanamid COMPANY

DYESTUFF DEPARTMENT

BOUND BROOK, NEW JERSEY

NEW YORK • CHICAGO • BOSTON • PHILADELPHIA • CHARLOTTE • PROVIDENCE
LOS ANGELES • PORTLAND, OREGON

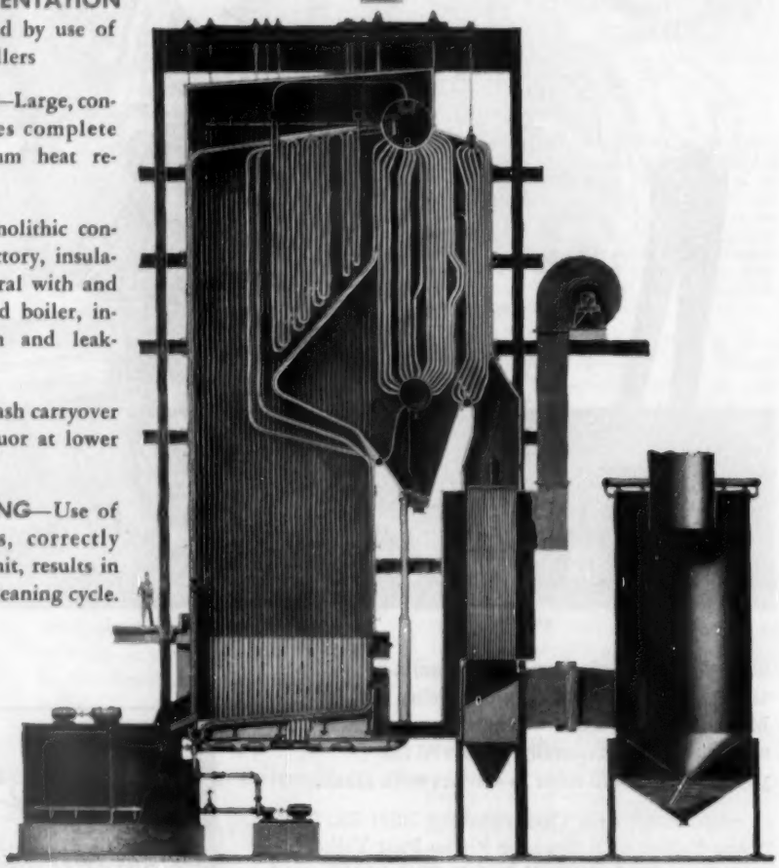
NORTH AMERICAN CYANAMID LIMITED, DYESTUFF DEPARTMENT
MONTREAL — TORONTO

Improved Design Features of B&W Recovery Unit assure . . .

MAXIMUM EFFICIENCY

in Chemical and Heat Recovery

- **COMPLETE INSTRUMENTATION**—Combustion is stabilized by use of automatic air-flow controllers
- **LOW FURNACE DUTY**—Large, conservative furnace assures complete combustion and maximum heat recovery
- **TIGHT SETTING**—Monolithic construction, in which refractory, insulation and casing are integral with and supported on furnace and boiler, insures uniform expansion and leakproof setting
- **CLEAN BOILER**—Low ash carryover is the result of firing liquor at lower per cent solids
- **NO ROUTINE LANCING**—Use of improved soot blowers, correctly located in the recovery unit, results in a thorough and efficient cleaning cycle.



Typical modern B&W Two-Drum Recovery Unit equipped with B&W Cyclone Evaporator.

BABCOCK & WILCOX

THE BABCOCK & WILCOX COMPANY
161 East 42nd Street
New York 17, N. Y.

P-780

Pulping of Hardwood Now Practical

ADVANTAGES OF AMMONIA BISULPHITE PULPING CONFIRMED

By Gordon A. Crowe

Technical Service Representative, Spencer Chemical Co., Kansas City, Mo.

BECAUSE OF THE LIMITED availability of softwoods in many parts of the country, a number of pulp mill operators are interested in the efficient pulping of hardwoods, such as beech, birch and maple. These operators will be encouraged by the results which have been obtained with ammonia base cooking.

23-Day Ammonia Test Run

ONE MILL especially interested in pulping hardwoods recently conducted a 23-day ammonia test run. Their carefully charted results show definitely that beech, birch and maple can be pulped easily in about seven hours' cooking time. Even more important, they discovered that the use of only a small percentage of these hardwoods quickly pays for the increased cost of ammonia base!

Gordon A. Crowe

OTHER CONCLUSIONS reached by the Technical Department of the mill making this test:

1) Ammonia base pulp gave increased yields when the regular mixture of softwoods was used.
2) Cooking time for softwoods was reduced by at least one hour.
3) Pulp quality was as good as and probably slightly better than the regular calcium base pulp.
4) Digester operation is more uniform when ammonia is used due to clean circulating systems.
5) Bleaching time and chemical requirements can be reduced when the pulp is made from ammonia base acid.

Information Available

IF YOU HAVE A QUESTION about Ammonia Bisulphite pulping, we'll be glad to hear from you. There is no charge or obligation for this service. Just write: Technical Service Section, Spencer Chemical Company, Dwight Bldg., Kansas City 5, Missouri.

AMERICA'S GROWING NAME IN CHEMICALS

PACIFIC COAST NOTES

MERRILL D. ROBISON, project engineer under *C. L. "BILL" CARNS* at the new Weyerhaeuser kraft mill, Everett, Wash., has returned to the company's Longview, Wash., pulp branch. He has been replaced at Everett by *TOM FIRESTONE*, formerly project chemical engineer. *LOUIS KOTNIK* has moved from shift chemist to Tom's former position.

JOE DUNN, formerly paper mill superintendent of Potlatch Forests, Inc., Lewiston, Ida., has resigned to join East Texas Pulp & Paper Co., Evadale, Tex., in similar capacity.

R. E. ARCHIBALD has been promoted from chief chemist to assistant superintendent of pulp and paper mill operations at Potlatch Forests, Inc., Lewiston, Ida.; *DAVE LEA* became chief chemist.

Only the BAGS are NEW
THE QUALITY... as uniform and dependable as ever!
TRONA
SALT CAKE
TECHNICAL
MURIATE OF POTASH
GRANULAR
SODA ASH
THREE ELEPHANT
FINE GRANULAR
BORAX
TECHNICAL
It's news when a brand you've specified for years comes to you in new and modern containers. That's why we say—"meet an old friend with a New Look!" On the other hand, it's not news but a long established fact that Three Elephant* and Trona† brand chemicals—by bag or carload, for farm or factory—are your guarantee of uniform high quality and economical production. So assure yourself of quality that's "in-the-bag" with dependable products from Trona—supplier of basic chemicals indispensable to Industry and Agriculture the world over.
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INDUSTRIAL AND AGRICULTURAL CHEMICALS

American Potash & Chemical Corporation

Offices • 3030 West Sixth Street, Los Angeles 54, California; 122 East 42nd Street, New York 17, N. Y.
• ESTON CHEMICALS DIVISION — 3100 East 26th Street, Los Angeles 23, California
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and a diversified line of specialized AGRICULTURAL, REFRIGERANT and INDUSTRIAL CHEMICALS

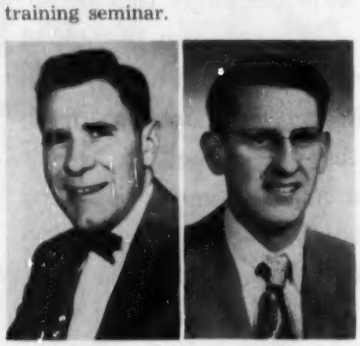
CERAMICS • GLASS • FERTILIZER • INSECTICIDES • PULP & PAPER • REFRIGERANTS • DETERGENTS

AVERILL J. WILEY, Tech. Director of Sulfite Pulp Mfrs. Research League, wins high national honor.

Averill Wiley Wins High National Honor

Averill J. Wiley, native of Spokane, Wash., and Institute of Paper Chemistry graduate and for several years technical director of the Sulfite Pulp Mfrs. Research League, representing 14 Wisconsin and Michigan mills, has won a certificate of merit from the Nash Conservation Awards Program for outstanding work in conservation of natural resources. He was a winner in a field of 700 nominations throughout the country.

PROF. EDW. BROWN, director of advanced management seminar at the U. of Washington, Seattle, reports there are still openings for the third annual session, to be held June 13-July 23. *ALFRED GRAEF*, technical director, Weyerhaeuser sulfite, Everett, Wash., will attend as will *FRED M. MILLARD* and *DON B. LOYD*, MacMillan & Bloedel pulp men from Pt. Alberni and Nanaimo, B. C. Prof. Brown told PULP & PAPER he hoped several more men from the industry in the Pacific Northwest would send men to this executive training seminar.

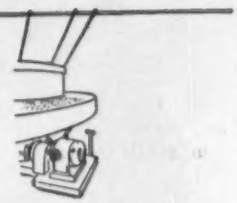


NEW ROBT. GAIR MANAGER; AFPI FIELD MANAGER NAMED

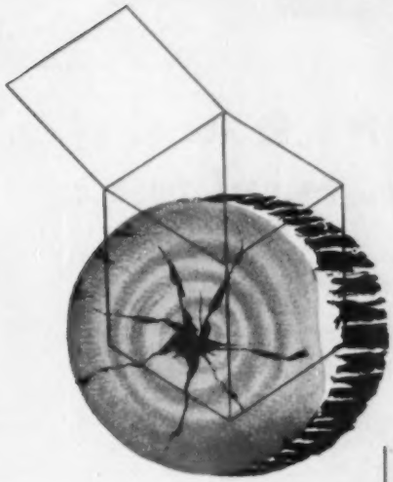
R. THOMAS HANGER (left), named new Division Manager of Corrugated Div. of Robert Gair Co., Inc., at Teterboro, N. J., according to William T. May, Jr., Vice Pres. of Container Operations.

GEORGE R. WHITE (right), new Field Manager for American Forest Products Industries, Inc., with office at 59 East Van Buren St., Chicago. Born in Virginia, he is graduate of Oklahoma A & M.

THE MARK OF AN EXTRA DEPENDABLE PAPER AND PAPER BOARD MACHINE

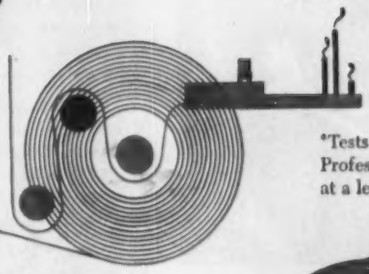


ELECTRO DYNAMIC

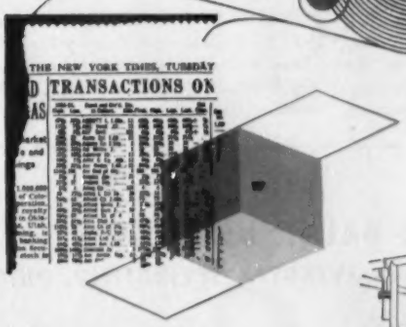


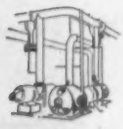
The red "power spot" on paper and paper board machinery means *powered by Electro Dynamic*, the most dependable motors *ever* available to industry.

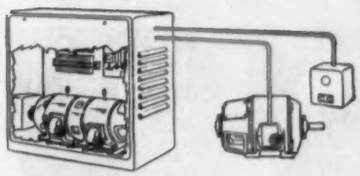
For *proof* of this *extra dependability* send the coupon below for your copy of **"MOTOR SHOWDOWN"**, a new candid report on comparative results of motor performance tests* conducted in accordance with A.I.E.E. standards.



*Tests certified by J. Arthur Balmford, Professor of Electrical Engineering at a leading Eastern university.







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ELECTRO Extra DYNAMIC *dependable motors*

1 to 250 hp. AC and DC. Standard or special purpose. N.E.M.A. standards.

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Please send me a copy of "MOTOR SHOWDOWN" and the new catalog of Electro Dynamic industrial motors.

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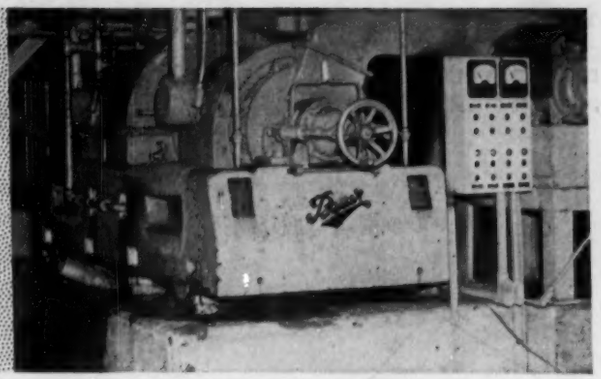


You are right if your choice of refiner is based on performance

The proof of actual results is the reason for the growing usage of Bauer Disc Refiners

Bauer Double Disc Refiners produce unique fiberizing and dispersing results through brushing and rolling manipulations combined with vigorous agitation and turbulence. The effects are especially important in the refining of short fibered pulps when a paper or board of improved appearance and greater strength is required.

Bauer

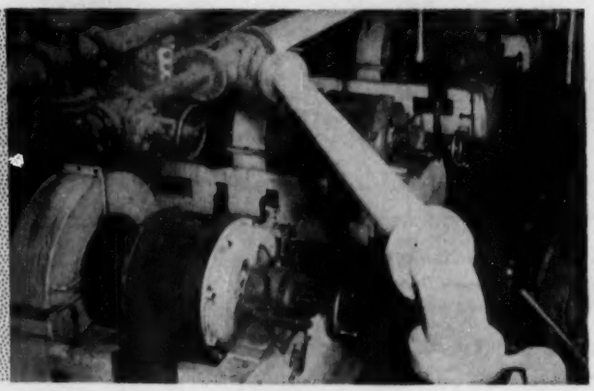
The extensive line of Bauer Single Disc Refiners has wide application for preliminary size reduction as well as final treatment of pulp stocks. Each job is an exactly engineered project in itself. There is no one refiner to do all jobs best.

We'll be glad to show you mill samples and engineering data as evidence of the work done by all Bauer Disc Refiners. In case you wish to try new materials, the Fiber Products Laboratory is at your service for test runs on commercial machines.

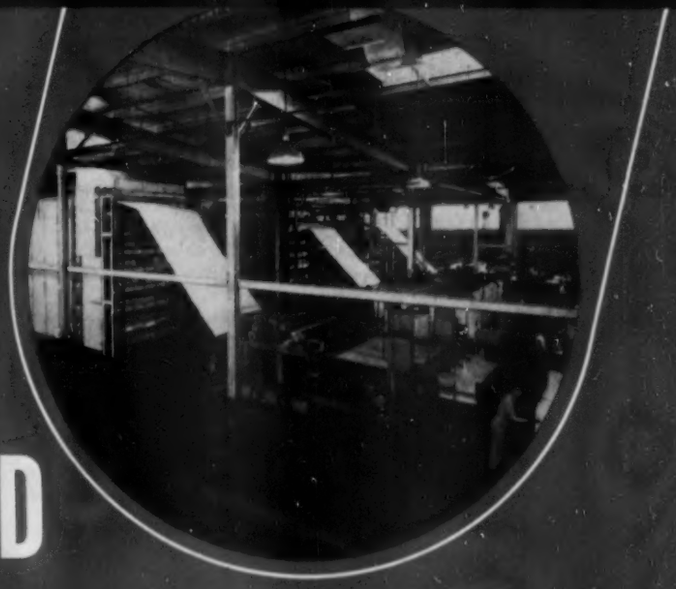
You are invited to communicate with us or confer with our sales engineers.

THE BAUER BROS. CO.

1706 SHERIDAN AVENUE • SPRINGFIELD, OHIO



PUGET PULP—the *whitest, cleanest, bleached sulphite pulp* that we can make is produced *particularly for the market.* To assure converting mills of top quality, Puget management is always testing new processes, always alert to improved methods, always ready to install new designs in equipment. *Gear your operations to* ***PUGET PULP.***



PUGET SOUND

PULP AND TIMBER COMPANY

BELLINGHAM · WASHINGTON

When you need instrument service . . .

Ever have a tire blow out while you're traveling late at night? If it happens near a service station, you're lucky. But if it's on a lonely road far from town, you've got trouble.

When it comes to service on instruments, you don't need to take chances on being lucky. Because when you have Honeywell instruments, you've always got the comfortable feeling that service is close at hand . . . whenever and wherever you want it . . . from the world's biggest instrument service organization.

Over 110 Service Centers

No matter where you may be, there's a Honeywell service man near you. Offices are located in more than 110 cities of the United States and Canada, near every large production center.

When you run into trouble, just telephone or wire the nearest of these offices. You'll get a service specialist promptly . . . often within a few hours. This quick attention to your needs protects your production schedules, and prevents delays that can cause costly stoppages.

Trained Personnel

Honeywell service men are thoroughly trained for their important responsibilities. In the Honeywell factories, hand-picked men learn both the theory and practice of instrument maintenance. Then they serve an apprenticeship in the field offices, to gain further first-hand experience. You can be sure that the Honeywell man who calls at your plant is a qualified specialist, well versed in the practical art of keeping good instruments in the best condition.

Periodic Service

But why wait for emergencies—when you can prevent them with periodic service. Under a simple contract, a Honeywell man will visit your plant at regular intervals to inspect, clean and adjust your instruments and controls. The plan is economical, and can save you hours of production time. Our nearby branch office will be glad to give full details on Honeywell Periodic Service.

Centralized instrumentation by Honeywell *helps implement*

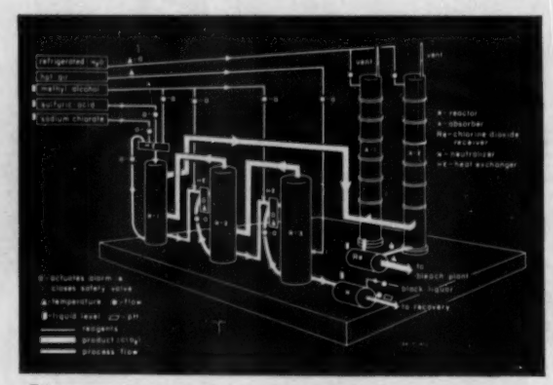
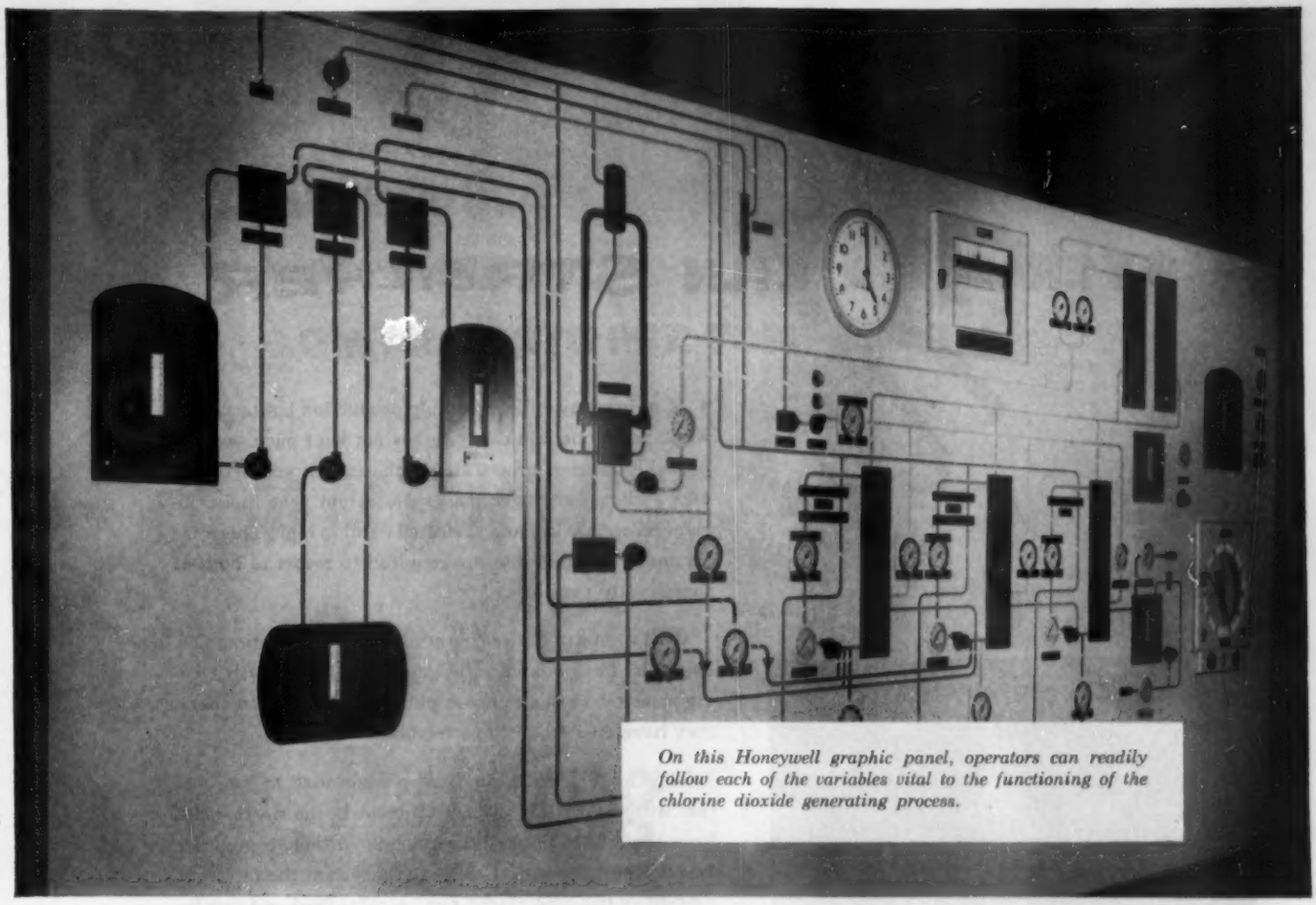


Diagram shows the basic elements of the Solvay system.



On this Honeywell graphic panel, operators can readily follow each of the variables vital to the functioning of the chlorine dioxide generating process.

new ClO_2 *generation process*

PAPER MILLS can now utilize the superior qualities of chlorine dioxide in pulp bleaching, through the use of a ClO_2 generating process developed by the Solvay Process Division of Allied Chemical and Dye Corporation. The high degree of close control required by the process is obtained through application of modern instrumentation, and operation is maintained on an economical, high quality basis.

This process reacts sodium chloride, sulfuric acid and methyl alcohol together in a continuous refluxing system. And at every stage, values of flow, liquid level and temperature must be accurately measured and controlled. Several installations of the new process, utilizing Honeywell instrumentation, have already been made. The multiple functions of process control are all concentrated on a Honeywell graphic panel, which displays each unit of equipment and its related variables in readily understood pictorial form. Engineered by Honeywell for the specific requirements of this process, the control panel makes it easy for an operator to learn how the process works, and to supervise its functioning.

The variety of instrumentation on this panel is a good example of the breadth of the Honeywell line. For it includes *Tel-O-Set* miniature indicators and controllers for temperatures, liquid levels and flows; *ElectroniK* pH control; and a master *ElectroniK* recorder which groups sixteen different records of remotely measured variables. And behind the scene is a complete safety system, utilizing *Pressuretrols* which operate alarms and shut down equipment in case of system trouble.

The extensive line of equipment, and the broad application experience which Honeywell has built up through years of work with the paper industry, are ready to serve your specific control problems. Call on your nearby Honeywell sales engineer for a detailed discussion of your requirements . . . he's as near as your phone.

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, Wayne and Windrim Avenues, Philadelphia 44, Pa.

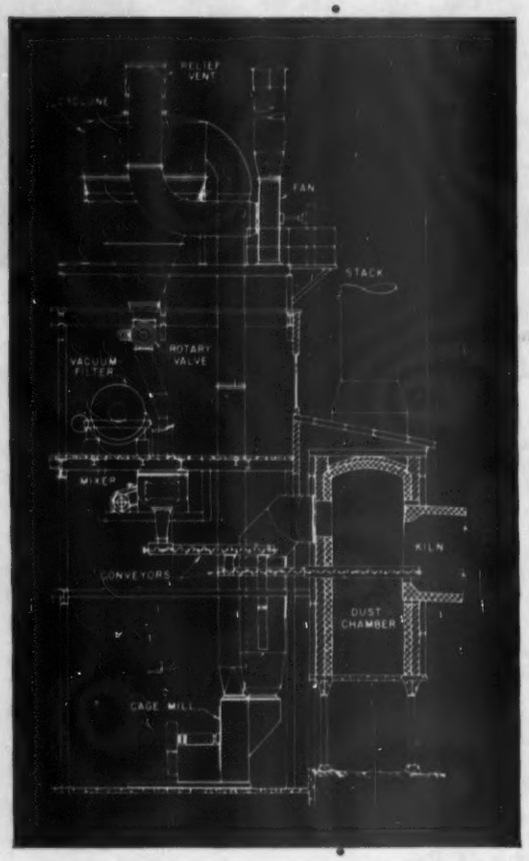
● **REFERENCE DATA: Write for Bulletin 2802, "Instrumentation for the Paper Industry" . . . and for Data Sheets on Specific Applications.**

MINNEAPOLIS **Honeywell**

BROWN INSTRUMENTS

First in Controls

EVER SEE A KILN STRETCHER



• If, as in many mills, your pulp production has increased while your lime kiln capacity has not kept pace, you are probably making large-scale purchases of lime or you are overworking existing kilns to the extent that their efficiencies are too low and their fuel cost too high. There are a number of mills that are required to resort to both of these costly practices.

Well aware of the seriousness of such a situation, C-E engineers have adapted the long established Flash Drying principle to this common pulp mill problem. In effect, they have created a "kiln stretcher."

The C-E Flash Drying System when used in conjunction with a lime kiln utilizes the heat in the waste gases from the kiln to pre-dry the calcium carbonate mud before it enters the kiln. Using such a system the moisture content of the lime sludge can be controlled and can be reduced to less than 10%. Thus the Flash Dryer removes about 85% of the drying load from the kiln. Consequently that part of the kiln which had been used as a drying zone becomes available for calcining. As a result kiln capacity may be increased by more than 40%.

Since the C-E Flash Drying System uses heat that would ordinarily go to the stack, the over-all fuel cost per ton of lime recovered is appreciably reduced. In fact, C-E Flash Drying Systems now in service have reduced total fuel consumption to 9-10 million BTU per ton of lime.

For specific information concerning the application of this system to your plant — or for information on any C-E equipment — you are invited to consult with our representatives in your area — or, if you prefer, directly with our Paper Mill Division in New York. B-736

COMBUSTION ENGINEERING, *Inc.*

Combustion Engineering Building
200 Madison Avenue, New York 16, N. Y.

BOILERS, FUEL BURNING & RELATED EQUIPMENT; PULVERIZERS, AIR SEPARATORS & FLASH DRYING SYSTEMS; PRESSURE VESSELS; AUTOMATIC WATER HEATERS; SOIL PIPE

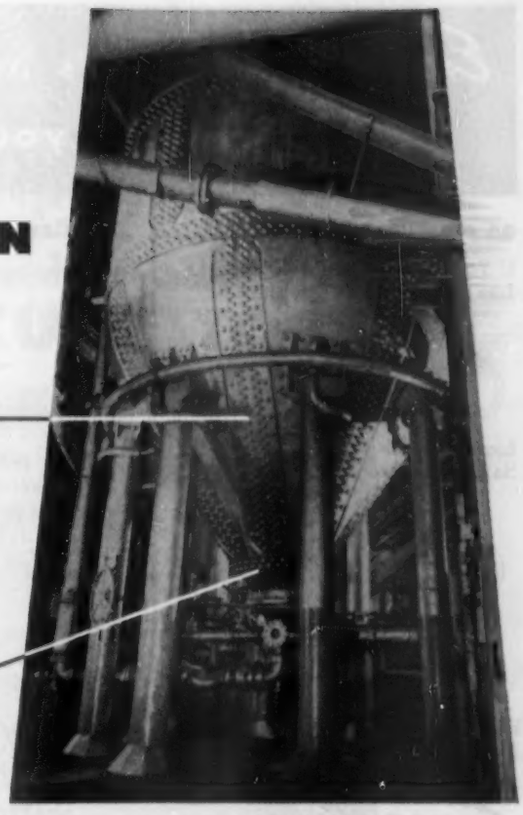
MORE PULP

PURER PULP

...LOWER COSTS PER TON

with

AMMONIUM Bisulfite Pulping



• **More pulp**—a higher proportion of acceptable pulp of increased freeness is produced, thus increasing the capacity of knotters, deckers, washers and fine screen equipment.

And here are some additional reasons why leading mills have converted to the high-production, low-cost Ammonium Bisulfite Pulping process using Barrett® Brand Anhydrous Ammonia:

• **Better quality**—unbleached pulp is more uniform, stronger, brighter; has lower ash and lower screened speck count. Less bleach needed.

• **Saves steam**—superior penetration reduces cooking time and maximum temperatures. Temperatures are lowered as much as 30°F!

• **Saves labor**—one ton of ammonia replaces *three* tons of limestone. Handling of limestone, scaling is eliminated.

• **Overcomes steam pollution**—waste liquor is *easily evaporated;* there is a greater recovery of heat and chemicals; while steam pollution is reduced to a minimum.

The changeover to this Pulping Process—pioneered by us—is inexpensive. A minimum replacement—and in many cases no replacement—of equipment is involved, and there is practically no loss of production during conversion.

Why not wire, phone or write us today? A member of our Technical Service staff will call, give you full details, facts and conversion methods. No obligation!

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Anhydrous Ammonia

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ALLIED CHEMICAL & DYE CORPORATION
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Ammonia • Sodium Nitrate • Urea • Ethylene Oxide
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☐ Yes, please send me full details on your Ammonium Bisulfite Pulping Process.

☐ Please arrange to have your Technical Service Man call! No obligation.

Name_____

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A Better America Through Chemical Progress • CHEMICAL PROGRESS WEEK • May 17 to 22, 1954

Engineers – here's how a *Speedline* system will cut your piping costs!

on pressure problems

If You Use Schedule 40 Pipe at 150 psi Operating Pressure

Schedule 40:
100 to 1 Safety Factor

Lighter Wall will Meet Pressure Safety Requirements

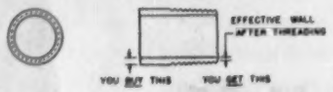
Schedule 10:
83 to 1 Safety Factor

Schedule 5:
50 to 1 Safety Factor

BUY ALL THE WALL YOU *NEED* . . . DON'T BUY *MORE*

on flow problems

If You Use Screwed Fittings



You Lose One Half The Wall You Bought—AT THE THREADS

Lighter Wall Plus Speedline Fittings Give You:

GREATER INSIDE AREA · MORE FLOW
LOWER PRESSURE DROP

You get *greater flow and capacity* in light-wall pipe. For example, Schedule 5 has 15% to 25% more capacity than Schedule 40.

on corrosion problems

CORRECT ANALYSIS will combat CORROSION regardless of Wall Thickness

Type Corrosion	More Wall?
Contamination	No advantage
Discoloration	No advantage
Intergranular	No advantage
Galvanic	No advantage
Atmospheric	May be advantage
Pitting	Little advantage
Inches Penetration Year	May be advantage

CHANGED ANALYSIS and LESS WALL can be GREATER COST ADVANTAGE than CHANGED ANALYSIS and SAME WALL.

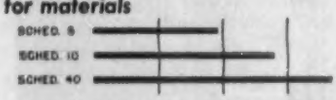
Speedline FITTINGS DESIGNED FOR SCHEDULES 5 AND 10 GIVE YOU:

lower installation costs

for labor

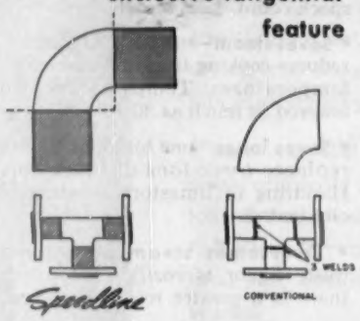
SPEEDLINE ALIGNING CONNECTORS
Speed Installation
*Can be Welded, Fused, Soldered or Brazed
Provide Easy Change-over from Schedule 40 to 5 or 10

for materials



You pay much less for light wall pipe. Here's a cost comparison of the three schedules in 1" size.

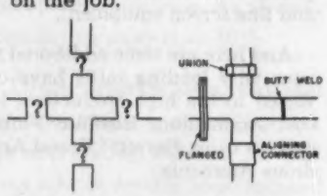
exclusive tangential feature



Provides Easier Aligning (with or without aligning connectors), more clearance for Welding or Flanging on ALL Speedline Formed Fittings. See gray panel below.

greater flexibility

Type of Joint can be selected "on the job."

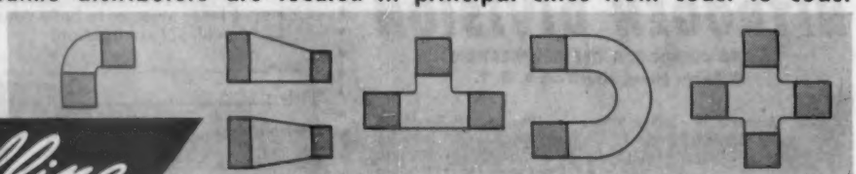


FEWER DESIGN HOURS
FEWER INVENTORY ITEMS

SPEEDLINE "Multiple Choice" Fittings eliminate conventional flanged fittings, provide time and cost advantages of simple layouts versus elaborate and costly designs.

Write for a copy of "Speedline Fittings"...without obligation.

Speedline distributors are located in principal cities from coast to coast



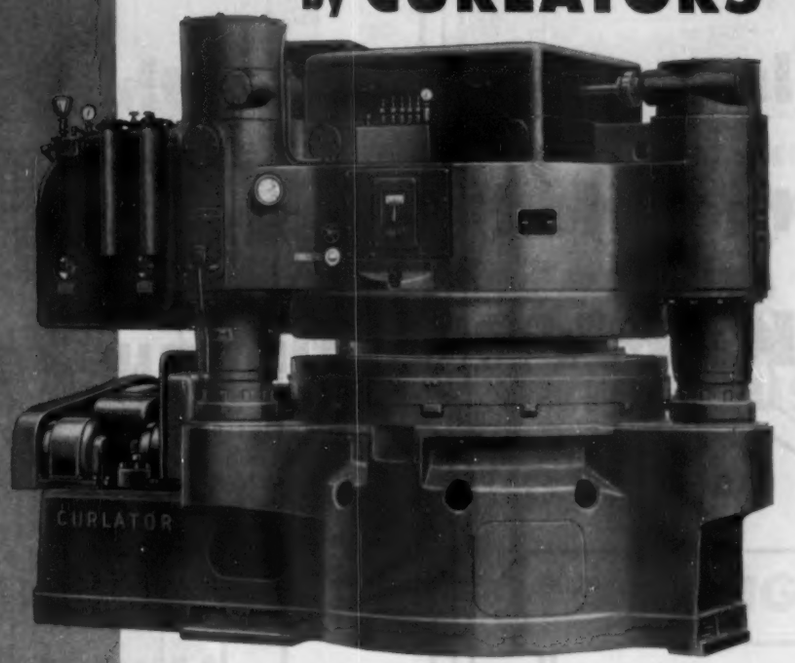
Speedline

Corrosion-Resistant FITTINGS—the newest thing in pipeline economy

Manufactured by **HORACE T. POTTS CO.** · 550 E. Erie Avenue · Philadelphia 34, Penna.

NOW Commercial 65% Yield News Sulphite is Here!

. . . made possible by CURLATORS



in continuous MILL OPERATION

CURLATOR

The Curlator is the first and only machine to produce a first-class news sulphite pulp at 65 per cent yield in full scale commercial operation.

This "semi-sulphite" replaces normal low yield sulphite pulp pound for pound in the newsprint furnish.

65% YIELD OF NO. 1 SULPHITE FOR NEWSPRINT

UP TO 30% SAVING IN WOOD ALONE *PLUS* UP TO 30% SAVING IN SULPHUR, LIMESTONE AND STEAM

43% INCREASE IN DIGESTER CAPACITY

CURLATOR† Corporation
EAST ROCHESTER, NEW YORK

WRITE for News Bulletin on Commercial 65% yield News Sulphite.

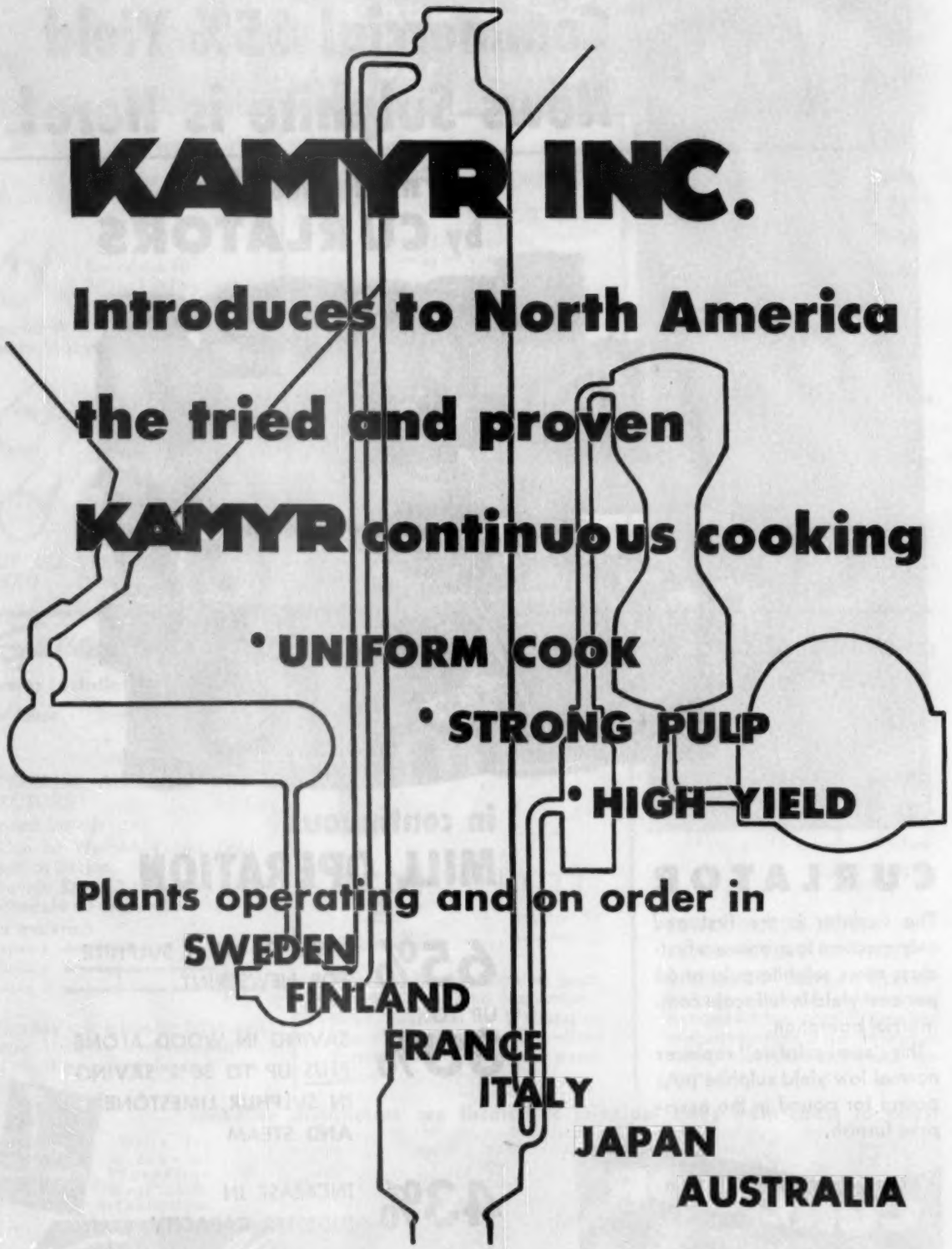
†T.M. Reg.—Curlator Corporation, Rochester, N. Y.

KAMYR INC.

Introduces to North America

the tried and proven

KAMYR continuous cooking



- **UNIFORM COOK**
- **STRONG PULP**
- **HIGH YIELD**

Plants operating and on order in

SWEDEN
FINLAND
FRANCE
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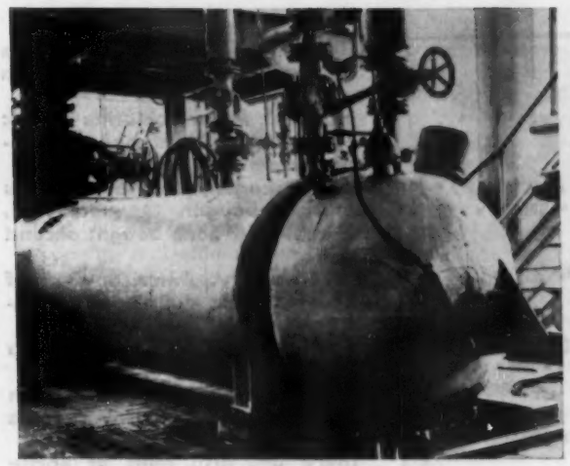
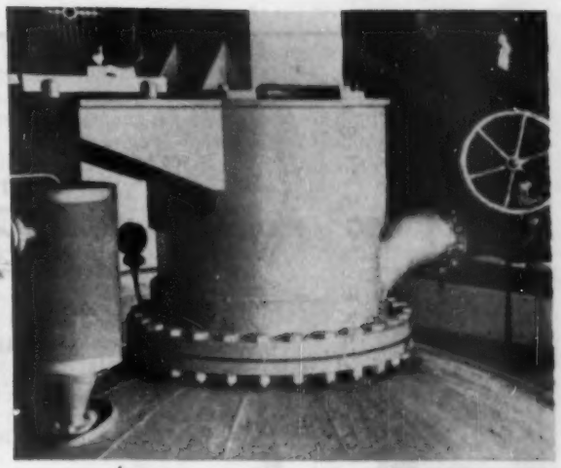
AUSTRALIA

For Information Contact KAMYR INC., Hudson Falls, N.Y.



STEAMING VESSEL



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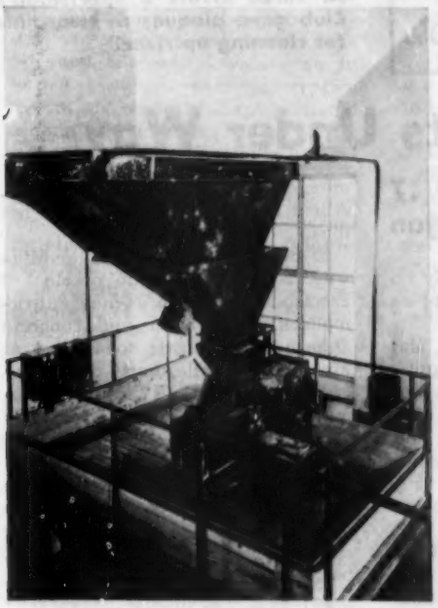
KAMYR CONTINUOUS COOKING OPERATING VIEWS



CHIP FEED

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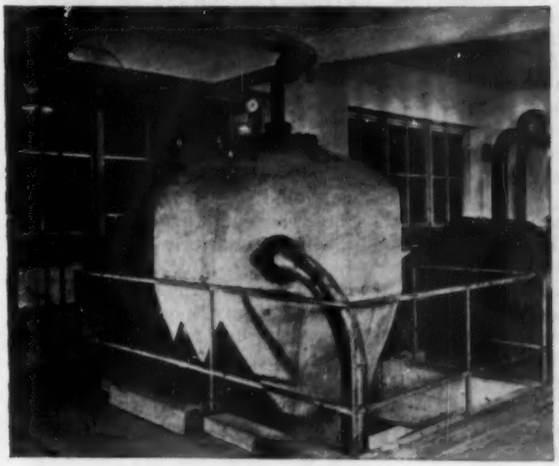
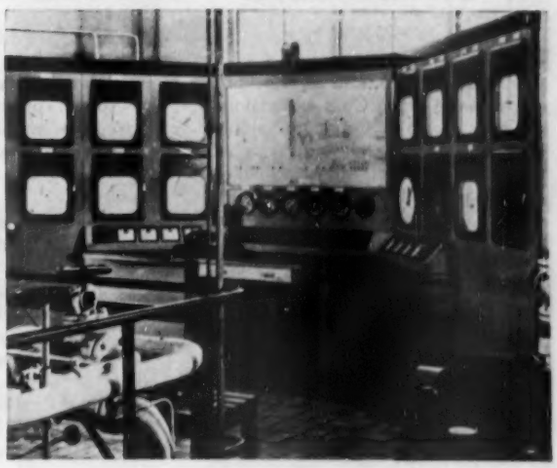
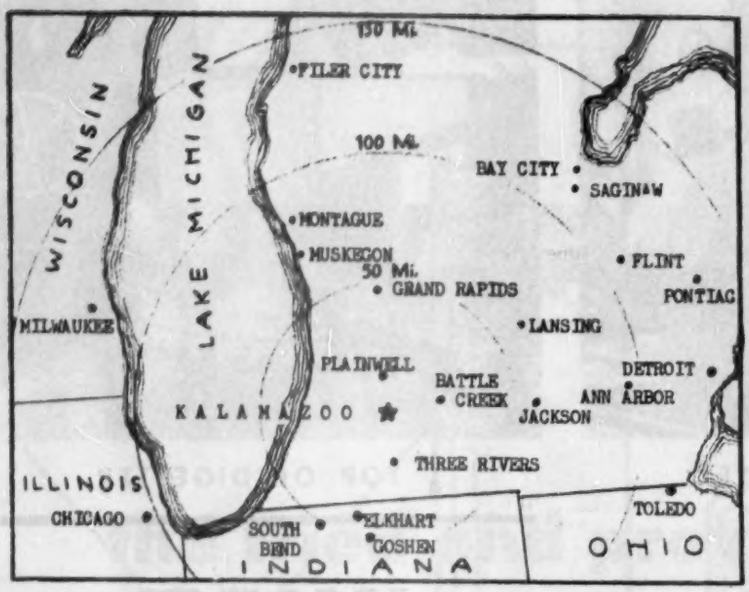


INSTRUMENT PANEL





THIS MAP SHOWS 50 mile circles drawn around Kalamazoo—a great paper center.
Hooker's new chlorine-caustic soda plant at Montague will supply expanding Midwest mills.
At Muskegon, Warren expands mill it bought. At Plainwell, Hamilton & Sons bought second mill.
At Filer City, American Box of Grand Rapids doubled its semi-chemical 9 pt. board plant.
At Detroit, Detroit Sulphite Pulp & Paper adds power facilities.
At Saginaw, Jackson & Church makes new type screw presses for bleach and de-ink plants.
There are also mills at Battle Creek and Elkhart which have expanded in recent years.
At Three Rivers a Sportsman's Club gave plaques to two mills for cleaning up river!

Big Coating Expansion Gets Under Way

Coating Expansion is But One of 17 Significant News Events in Michigan

FOR NEWS OF PROGRESS and new activity in this industry, there's probably no area where there is more of both than the Wolverine state. These are recent events noted by PULP & PAPER editors touring Southern Michigan:

1. Sharply accelerated interest in coating, especially in the board field, and for offset papers, with installation of new coating machines and coating equipment at different mills. In next few years, well known coating patents are going to expire and the industry is generally alert to this.

2. Glen Sutton, former president of the Superintendents Association and veteran superintendent of Sutherland Paper's North Side plant in Kalamazoo, in an interview with this magazine predicted that within 5 years over 75% of folding boxes will be coated for better printing, eye appeal, etc., as compared with only 10% or less now.

3. Regular Monday evening coating discussions at Western Michigan College, led by Dr. Alfred Nadelman, head of the paper technology department there, has turned into a 4-star attraction in the Midwest, drawing mill men from all over the area.

4. That paper school in Kalamazoo, incidentally, now grown to "department" stature in pedagogic lingo, has a good chance of hitting a 100 enrollment next fall, with students from all over U.S. and foreign lands.

5. S. D. Warren Co.'s expansion of its new Central Paper division at Muskegon is proceeding as scheduled, as evidenced by our progress pictures. By fall the No. 4 machine rebuild, addition of three supercalenders and two Warren coaters will be done and a bleaching project may be ready. Vast areas of oak, one of Michigan's most prolific trees and up to now a drug on the market, should become its No. 1 pulp resource.

6. Michigan Paper Co. of Plainwell, bought by W. C. Hamilton & Sons of Miquon, Pa., now has powerful support of Hamilton's strong national sales and advertising resources, as well as research and engineering organization. Expansion is planned at both mills. No longer is Plainwell a "captive mill" of the newspaper publishing industry, required to supply newsprint when needed, often to detriment of printing or higher quality paper customers.

7. Vital to national defense, Allied Paper Mills is building a new modern photo paper plant in Kalamazoo which will have a new coater, supercalender and winder. It will more than double its output of baryta coated photobase. Eastman is only other producer of this defense-important item in Western Hemisphere. Eastman is reported to have corrected trouble it had when hot atomic ash ruined film in Rochester. Allied has had no trouble with hot dust.

8. Big industrial event of the Midwest is current startup of Hooker Electrochemical Co.'s huge ultra-modern glass, brick and concrete chlorine and caustic soda plant at Montague, 17 miles north of Muskegon, under Joseph A. Tardiff, works manager. Strategically placed to supply expanded needs of up-graded Midwest mills, this is biggest event in chlorine-caustic world since Hooker and Penn Salt built plants on Puget Sound a quarter century ago to serve the then new Far West pulp mills.

9. Allied Paper and Kalamazoo Paper are operating de-ink waste settling basins. Four more were soon to be operating—for St. Regis and Michigan Paper and for the other Allied and Kalamazoo Paper divisions. These mills and others with new savealls, etc., have drastically lessened mill effluent going into the Kalamazoo River, complying with state requirements.

10. As big news as "man-bites-dog" and quite as remarkable was the awarding of handsome engraved plaques to the presidents of Rocky River Paper Mill and Constantine Board and Paper Co. by the St. Joseph County Sportsman and Conservation Club for cutting pollution in St. Joseph River. A new improved Bulkley Dunton Colloidair waste disposal system was credited with doing the job at Rocky River.

11. At Otsego, near Plainwell,

Otsego Falls Paper Mills has greatly expanded its board semi-chemical operations using hardwoods after adding power plant facilities.

12. Jackson & Church Co., up at Saginaw, Mich., has been developing successfully new uses for their Zenith screw presses in groundwood bleach plants, de-ink plants, and processing mill effluent. Also their Roto-pulper for defibrating and similar uses. Showing promise is uses of press for recovery of asphalt and fiber from roofing paper.

13. Detroit Sulphite Pulp & Paper, headed by G. N. Carleton, is adding modern power plant facilities following up postwar addition of twin Beloit Fourdrinier machines.

14. Sutherland Paper Co. is not only putting in a new converting plant with twice the floor area of the old one, but also will have one central machine shop, one central supply shop, one central warehouse. In former instances each will replace five or six separate shops scattered around mill grounds.

15. Kalamazoo Vegetable Parchment Co., in line with this industry's present trend toward extending and improving converting operations, has installed a new 6-color printing press and plans other additions.

16. Testifying to the growing importance of Southwest Michigan paper industries, General Electric Co., one of the biggest suppliers of equipment to them, as to paper and pulp mills everywhere, is opening a Kalamazoo office. Dave Gearhart, paper specialist, is in charge.

17. Long steps are being taken to solve critical problems arising over efforts of mills to use waste papers with new inks difficult to remove, or resins and binding glues. Big chemical companies are helping mills.

Big Box Coating Increase Forecast

GLEN SUTTON, superintendent of the North Side mills of Sutherland Paper Co., and former national president of the Superintendents, told PULP & PAPER in an interview last month that within five years he expects that over 75% of all the folding boxes made in America will be coated.

This would be a phenomenal increase from present coating of only about 10% or less of this production.

Living and working in one of the great paper coating centers of the world—Kalamazoo—and recognized as a well-informed observer of board and container production trends, Mr. Sutton's prediction will be widely accepted as authoritative.

"Within ten years," he said, "virtually all the folding box production will have to be coated in order to be competitive. Better printing, clearer reproduction of half-tones and generally improved eye-appeal are among the advantages of a coated boxboard. The coating will be done either on or off the machine."

GLEN SUTTON— Predicts phenomenal increase in coating of folding boxboards.

The use of coatings will give mills a lower furnish cost and a better sheet, he said. Better printing and higher brightness with a lower furnish cost will be the result.

The pigment and color suppliers are doing a lot to stimulate this trend, Mr. Sutton said, because they are developing new and improved colors for industry use.

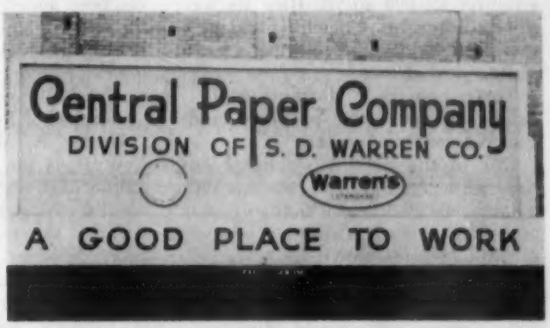
New Barkers May Be Key to Oak Usage

NO GRASS is growing under feet of S. D. Warren executives and the old staff of Central Paper—still substantially intact—as they work as one team today to push to completion by fall the first phase of expansion at the Muskegon, Mich., mill.

Under new Mill Manager Frank Roberts, only a few key men were brought from Maine to the west Michigan port to augment Central's staff when Warren bought the mill and launched the program to make Central a major producer of coated and book papers as well as its kraft specialties. Ultimately, this 100 ton mill may be pushed to 200 tons capacity.

When visited by PULP & PAPER last month the expansion was proceeding on schedule. It is anticipated that for the first time in the Midwest a mill may make extensive use of the prolific oak that grows in Michigan. Also birch and beech, and other hardwoods. The trend to hardwoods in the Lake States up to date has been primarily in use of aspen or "poppel." Oak usage will be a major new use.

Industry folk familiar with the



ONE OF FIRST NEW SIGHTS at Central Division of S. D. Warren Co., Muskegon, Mich., was this signboard on street side of mill—picture by *PULP & PAPER* editor on recent visit there.

A NOSTALGIC TWANG came when this old landmark had to be removed—here is last picture of the old office building of Central Paper, which in last century was a lumber company office.

wonders Warren already has performed in using new woodpulp species are not expecting them to fail.

What may be the key to the extended use of hardwoods at the expanded mill are two new 10 to 12 cords per hour capacity Impco Swedish type log barkers.

These will be the first of the Impco barkers since the model one demonstrated at Lincoln, Maine (see PULPWOOD SECTION, PULP & PAPER, Apr. page 80). Impco has improved the Swedish Sund barker, a cambium-shearing type of barker. Six debarking tools rely entirely on spring pressure. Either 8 ft. or 4 ft. logs will be automatically barked as they enter infeed conveyors.

In this first phase of Central expansion, 125,000 sq. ft. of floor production space is being added to the existing 450,000 sq. ft. Rice Barton is rebuilding No. 4 machine and Reliance Electric & Engineering is providing new drives.

Three new B. F. Perkins supercalenders are being provided and two Warren type coaters.

One of the notable sidelights on this work is that it is the second major pulp and paper industry engineering and construction project for the world-known Sumner S. Sollitt Co. of Chicago.

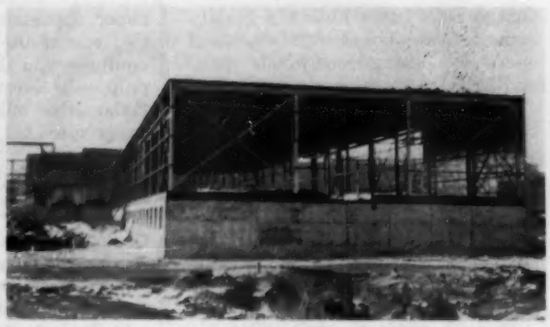
This company's first big project in this industry was also in Michigan, where it stepped into a big mill development to replace another engineering firm early in the game and made a record which unquestionably had a lot to do with its winning the Muskegon assignment.

Engineering and design is by Sollitt with a Central Division staff under Mr. Roberts, former engineer at Warren's Maine mill, closely cooperating.

William A. Wrace, who has been at Central for several years, remains to head up its engineering. To his staff has been added Walter J. Lebel, from the Cumberland, Maine, mill, a U. of Maine graduate, and Richard A. Maley, formerly with Great Northern at Millinocket, Me., a graduate of Rensselaer Polytech, N. Y.

Walter A. Woods, a veteran of Central, is the production manager in the new regime, with Everett P. Ingalls, Jr., from Warren's Maine mill, as assistant production manager.

Hugo J. Hotz, technical director for many years at Central, remains as technical director, as do many others of Central's staff.



JUST PART OF NEW EXPANSION is this building to house Off-Machine Coating Department with its steel work up. Will house two new Warren coaters for papers made in Michigan division.

ANOTHER GLIMPSE of new additions at Muskegon is this framework for new shipping dock for Central Division production which will put S. D. Warren in Chicago and Detroit markets strongly.

Greatly Expands Photo Paper Plant

OF VITAL IMPORTANCE to national defense, a new expanded plant to produce special photographic papers is under construction at the King Mill of Allied Paper Mills in Kalamazoo, Mich. When completed by late summer, it will more than double Allied's production of this militarily important item.

There is only one other producer of vital baryta-coated photographic base stock in the entire Western Hemisphere—Eastman Kodak Co., at Rochester, N. Y.

Some time ago newspapers reported that hot atomic dust fell into the lake from which Eastman draws its water supply and that this ruined some of its photographic film. Corrective measures were taken and it is believed that Eastman is having no more difficulty with radioactive dust.

But ever since Allied Paper successfully began making this baryta-coated technical specialty back in 1939, the importance of having two widely separated sources of supply has been evident to defense authorities. Allied uses water from wells and has extensive air-cleaning equipment. It has never been bothered by hot dust falling in its vicinity, but is continually on the lookout for it. Allied monitors all its special paper with Geiger counters and a special x-ray film.

Several other U.S. mills in past years attempted production of baryta-coated photographic papers without success.

All of Allied's production is sold to photo sensitizers who in turn supply government and military consumers. About half the domestic producers of sensitized photographic paper were dependent on Europe for their supply to baryta-coated photobase prior to World War II.

Photo sensitizers themselves assisted Allied Paper and Lee Paper Co. of Vicksburg, Mich., in developing various types of photographic papers. Lee makes a photographically pure base stock. Some of this goes direct to sensitizers. Some is first coated at Allied with a mixture of extremely pure gelatin and a pure white pigment chemical known as barium sulfate, or baryta.

An early stumbling block was dif-

V.P.'s Work on Project

WORKING CLOSELY on new Allied Paper Mills' project for a new Photographic Papers Plant for greatly expanded production, are: W. A. KIRKPATRICK (left), Vice Pres. and Technical Director; H. B. JOHNSTON (right), Vice Pres. and Chief Engineer.

ficulty in obtaining a pure baryta pigment, so Allied erected its own baryta chemical plant.

It was a week-long process at first to wash and settle a fine white precipitate which resulted from bringing together purified barium chloride and sodium sulfate. A centrifuge, similar to a huge cream separator, now accomplishes in minutes what used to take hours.

Air must be filtered and purified, with equipment that could even remove cigaret smoke, in a photo paper plant. Walls and floors are washed daily with pure water and all workers wear special clothing.

Allied's new plant will contain a special coating machine for a wide variety of photo papers. A new supercalender will supply high finish for glossy prints and "print-a-minute" camera papers. A special rewinder will be installed.

J. O. Ross Engineering has designed air treatment. All areas will be kept under air pressure and air will be cleaned and conditioned.

The photographic division enterprise is under supervision of W. A. Kirkpatrick, vice president and technical director of Allied Paper Mills. In direct charge of the division is Donald Huyser, a 1952 graduate of the paper technology course at Western Michigan College.

H. B. Johnston, vice president and chief engineer of Allied Paper Mills, is in charge of design of the new plant and its equipment.

Top executives of Allied are Dwight R. Curtenius, president, and Fred C. Fischer, vice president, secretary, treasurer and production manager. In two mills it makes well over 300 tons a day of high grade book, coating and specialties.

SPECIAL EQUIPMENT FOR SPECIAL PLANT

Equipment for the unique ultra-modern new photographic paper plant now being built by Allied Paper Mills in Kalamazoo (King Division):

Triple filters and air system	**J. O. Ross Engineering Corp.**
Coater	**Allied's own special design**
Calender stack	**Wheeler Roll Co.**
Wind-unwind stand	**Appleton Machine Co.**
Winder	**Kidder Press Co.**
Plastic piping	**U. S. Rubber Co.**
General contractor	**Miller Davis Co.**

Air handling is a vital part, as article relates. The Appleton Machine wind-unwind stand is unique, with shaftless operation and features to reduce down time. Kidder winder provides exceptional accuracy and continuous inspection.

Plainwell Purchase Ends "Captive" Era

ONLY A LITTLE over two months have passed since the news broke that Michigan Paper of Plainwell had been sold to W. C. Hamilton & Sons, Miquon, Pa., but already the paper industry of Kalamazoo valley is just about unanimously agreed that this is one of the best things that has happened to it in years.

It marked the second time that a nationally-established, highly regarded Eastern firm has reached out to the Middle West for a mill property—and some close observers in the industry are wondering if it portends more East-Midwest combinations. A few months before this, S. D. Warren had taken over Central Paper.

Well established in the trade, Hamilton is expected to greatly bolster Michigan Paper with its strong national sales and advertising organization, its research facilities and engineering resources.

The purchase ended the "captive mill" status of Michigan Paper, and Michigan industry leaders interviewed by PULP & PAPER expect this will have a salutary effect on its personnel and its sales.

For seven years the mill belonged to the Detroit News and the Booth Newspapers. The owners had done much to improve and expand the mill, investing generously to that purpose. But the hard fact remained that they wanted the mill primarily to assure them a newsprint supply. So, regular old customers of its higher quality papers took it on the chin whenever a major portion of its 80 tons production of book, catalogue, writing, poster and other papers had to be diverted to news.

Fact is, however, no newsprint has been made at Plainwell since Oct. 1952. But this situation could not be considered stabilized as long as it was a "captive mill."

For the 250 employes of Michigan Paper, the new ownership means stability of activities and will necessitate the building up of finishing room crews.

Plainwell's three Fourdriniers plus Hamilton's seven machines (making 150 tons daily) make Hamilton one of the nation's largest producers of fine papers.

A 98-year old paper firm acquired one with 81 years history. Actually, another company first made paper at the Hamilton mill site in 1746—208 years ago—and was chosen by Ben Franklin to make paper money for the Pennsylvania assembly. Just a few miles from Miquon is the site of the first North American mill of 1690—Rittenhouse.

Miquon is the Indian name for William Penn. W. C. Hamilton,

TOWN AND MILL WARMLY WELCOME NEW OWNERS

ALLAN B. MILHAM (left), Pres. and Gen. Mgr., Michigan Paper Co., at his desk in Plainwell mill offices, talks over highly favorable response of that town and entire Kalamazoo Valley to the Hamilton purchase with his veteran General Superintendent, RAY BARTON (right). Both continue in their positions. Mr. Milham has served as President of two valley paper firms. He is nephew of a pioneer of the valley industry.

bought the Miquon mill in 1865, when he was its manager. A controlling interest was bought by Howard W. Taylor in 1924. His son, Lane Taylor, has been president since 1953, succeeding Hugo Hanson, now chairman.

Since 1920, Miquon has tripled its output and the owners have plans to expand and improve both mills.

Allan B. Milham, nephew of one of the pioneers of the Kalamazoo valley industry and for many years with Bryant (now St. Regis), of which he was president, continues as president of Michigan Paper. He succeeded Dwight Stocker when the latter accepted the presidency of KVP in Sept. 1952.

Ray Barton continues as general superintendent at Plainwell and the key executive operations management team under him are William "Butsy" Astle, beater room superintendent; Leo Borden, boss machine-tender; and James Arthur Dean, technical director. Thus, ex-New Englanders run operations and both Mr. Barton and Mr. Astle are from the Groveton, N.H., mill.

The Hamilton mill buys all of its pulp. Michigan Paper has a de-inking waste paper plant and has virtually completed a sludge-settling basin for de-ink waste in compliance with state orders. Most recent expansion carried out at Plainwell by its former owners are new storage and shipping additions.

MICHIGAN PAPER CO. at Plainwell, showing new addition to right of office.

How Edgar Bros. Gains by Merger

IN THE RAPIDLY expanding coating paper fields of this industry, ranging from book to board, it was big news when Edgar Bros. Co. merged with Attapulgus Minerals & Chemicals Corp. to form the new American Minerals & Chemicals Corp.

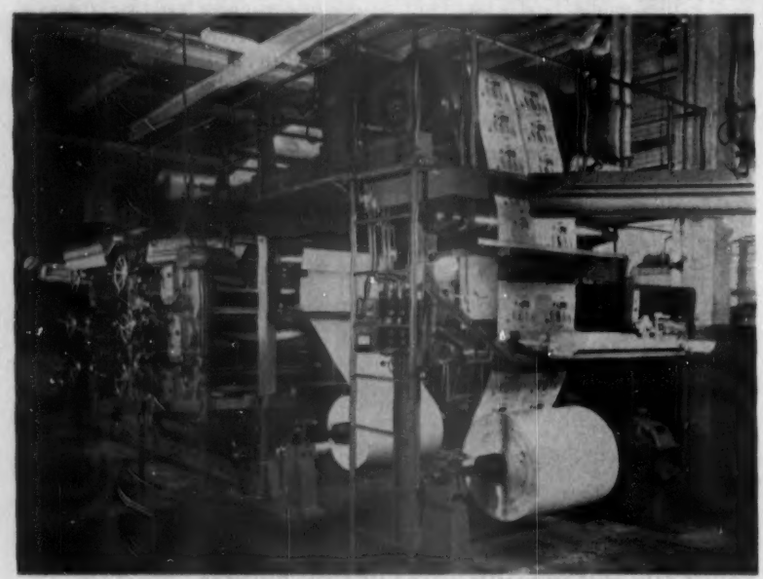
Edgar Bros. Division of American Minerals & Chemicals continues to carry the name "Edgar" on all kaolin products of the merged enterprise and thus will still bear its imprint in this industry's history as a pioneer and a leading firm in the extension of clay uses in papermaking over a quarter of a century. The Edgar record began with clay merely used as a filler. Now clay is a major coating material with tonnage now used by paper and board mills many times what it was, and increasing.

The fullers earth and other products of Attapulgus have had only minor uses in this industry, but it is a matter of record that Attapulgus products made possible the new non-smudging carbon paper developed for National Cash Register Co., which heralds a dawning day when stenographers won't look like coal miners after handling carbons. As is now well known in this industry, the new carbon paper has specialty clay coating which makes reproductions cleanly.

This invention had nothing to do with the merger. However, the basis for this merger involve factors that will greatly strengthen both companies. Both companies are well established in management and research. The administrative organization of Edgar Bros. will be a particular benefit to Attapulgus. On the other side, Edgar gains unusual research organization and facilities of Attapulgus. Combining of their financial assets also strengthens both.

The strong company direction of Edgar Bros. in Metuchen, N. J., will be represented in the new American M. & C. with their president, James Deshler, as chairman, Alfred G. Blake as executive v. p. of the new firm, and C. W. Nielsen as treasurer. Attapulgus contributes Wright Gary as president, David E. Lilenthal as executive committee chairman, and R. H. Hubbell, Jr., as vice president.

JAMES DESHLER (left), Pres. of Edgar Bros., now is Chairman of new American M. & C. of which Edgar Bros. is a division. ALFRED G. BLAKE (right), V.P. of Edgar Bros., who becomes Executive V.P. of merged company.



THIS PRESS RUNS SIX COLORS AT ONCE

KALAMAZOO VEGETABLE PARCHMENT CO., Kalamazoo, Mich., installed recently this new six-color press made by Cottrell Co. of Milwaukee. Louis Allis Adjusto-Speed drives and Falk gears provide the specially developed drive assemblies for the complicated machine, one of most modern in the paper industry.

THE *Right* SAVE-ALL FOR YOU IS THE SAVE-ALL THAT SAVES:

STOCK

With a well planned Bird Save-All system efficiency of fibre recovery is close to one hundred per cent. Valuable color or filler is retained in the system. The recovered fibre is returned for immediate re-use. Stock matched for color, size or filler stays in the system until it comes out in the finished sheet.

WATER

It stays in the system. This means substantial savings in filtration and pumping. Where warm water is used the fuel savings are considerable.

TIME

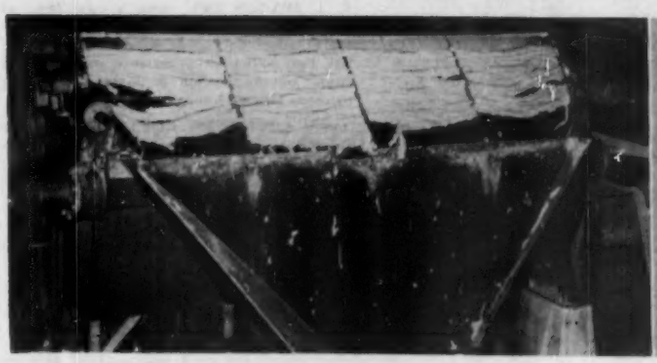
Wash-ups can be made in a small fraction of the time otherwise required. In many cases the entire system requires only a few hundred gallons and wash-ups take less than fifteen minutes.

TROUBLE

Much of the bother and expense of handling large volumes of wet or dry broke is eliminated. Changes of color, filler, weight or deckle are quickly made, without waste.

MONEY

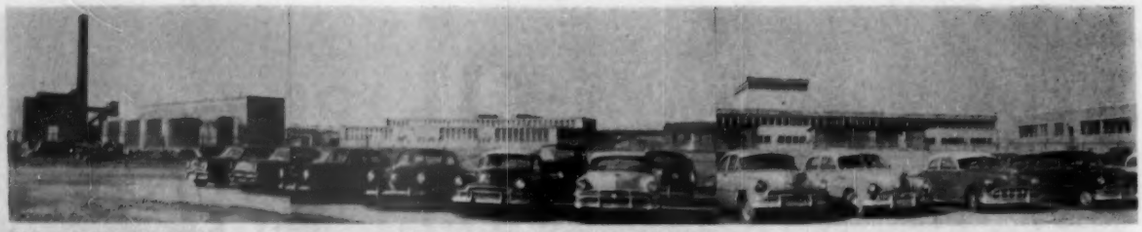
Besides the above operating economies, the Bird Save-All is designed to deliver recovered stock at lowest cost per pound.



THE BIRD SAVE-ALL

BIRD MACHINE COMPANY

South Walpole, Massachusetts



HOOKER'S NEW PLANT—A GREAT EVENT IN MICHIGAN INDUSTRY

A TRAVELING EDITOR of *PULP & PAPER* took these views of the huge new chlorine-caustic soda plant of Hooker Electrochemical Co. on the sands at Montague, Mich. Picture was taken with 35 mm. film and in three sections, stripped together above.

Hooker Completes Big Midwest Plant

IT HAS BEEN 25 years since Hooker Electrochemical Co. built the first chlorine-caustic soda plant in the Pacific Northwest, for the purpose of serving the then fast-growing market pulp industry in that area, and today that plant is turning out just about 25 times as much production.

At Montague, Mich., 17 miles north of Muskegon, Hooker has now built a new $12,000,000 chlorine-caustic soda plant to serve Middle West customers.

The strategic location of this new Hooker plant will be of greatest economic importance to the pulp and paper mills in the Lake States, many of them with new or fairly new bleach plants or up-graded processes requiring these Hooker products. Several large brick and concrete structures, with liberal use of glass, constitute this plant and in a fine new brick office building are ensconced Joseph A. Tardiff, works manager, and his staff.

Mr. Tardiff is a Dartmouth graduate, 17-year Hooker veteran. Sales for the Midwest are centered in Chicago offices at 1 North La Salle, where William A. Gillespie is sales manager, with an augmented staff.

The late Elon H. Hooker, founder of the 49-year-old company, E. R. Bartlett, then vice president and works manager and now chairman, and R. Lindley Murray, then plant superintendent at Niagara Falls, and now president, were among spectators when the Tacoma, Wash., plant was started up. Col. Albert H. Hooker, Jr. western sales manager through its years of growth and now retired, also watched the late Jasper Rowland, chief engineer and designer of the plant, raise the flag.

The first plant cost $1,500,000. Salt, raw material, was brought from far-off Spain for a year but since then has come from San Francisco Bay area. A circuit of new Hooker Type S cells was added to the two Type E circuits in 1936.

The latter were replaced by Type S-3 cells in 1950. Other additions and chemical products were added, leading to the first ammonia plant in the Northwest in 1952. A major expansion in chlorine-caustic soda cell capacity recently was completed.

Thomas E. Moffitt is western manager and Horace W. Hooker Jr. is western sales manager. Russell O. Vognild is assistant western sales manager.

WILLIAM H. MONSSON (left), Niagara Falls headquarters, Supervisor of Chlorine-Caustic Soda Sales and Service of Hooker Electrochemical Co., and WILLIAM L. GILLESPIE (right), newly appointed Chicago District Sales Mgr., succeeding CHARLES CAIN, who has transferred back to Niagara Falls and will enter sales-service to plastics industry.

SNAPPED by *PULP & PAPER* at new Hooker plant in Montague, Mich. LESLIE H. MOYER (left), Office Manager, and JOSEPH A. TARDIFF, Works Manager and overall top executive at the new establishment. Mr. Tardiff, graduate of Dartmouth, has been with Hooker since 1937. Mr. Moyer went to business college in Hamilton, Ont., has been with Hooker 30 years.

General Electric Opens New Office

IF ONE COUNTED ON fingers of one hand the biggest suppliers of equipment to this industry, one of the first named would surely be General Electric Co.

Now G.E. has taken cognizance of the fact that one of the currently most active areas for the paper industry is Kalamazoo and it opened a new General Electric office at 112 Parkway.

David B. Gearhart, one of the G.E. top specialists for the paper industry, has moved to Kalamazoo from Grand Rapids to take charge. His title is manager of the apparatus sales dept. for Southwest Michigan. He serves public utilities, too, and other industries, but a major activity for him will be the 23 pulp and paper mills in that area.

Mr. Gearhart has bought a lot on Bronson Blvd., where he will build a new home for himself, wife and daughter, 12. Born in Hopkinton, Ia., he graduated from Iowa State in 1927 with an e.e. degree. He has been with G.E. ever since, based in Grand Rapids for the past 15 years.

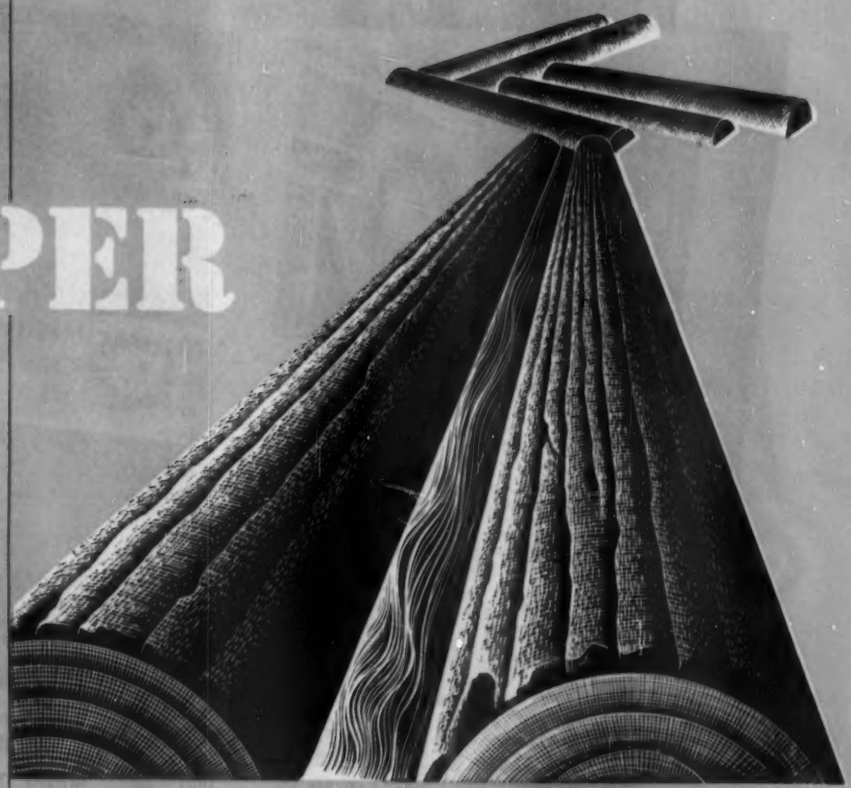
He is a professional engineer in both Iowa and Michigan. He has assisted in engineering many paper installations in Michigan and is now particularly active in coating equipment engineering.

C. J. MELOUN (left), who is new Mgr. of Pulp and Paper Industry Engineering for General Electric Co. in Schenectady, N. Y. He has had extensive experience as pulp and paper mill application engineer for G.E. He succeeds George Knapp, now promoted.

DAVID B. GEARHART (right), who moves to Kalamazoo, busy paper center, to take charge of new G.E. office there.

WOOD PULP

PAPER



BULKLEY, DUNTON & CO., INC.
BULKLEY, DUNTON PULP CO., INC.
BULKLEY, DUNTON PAPER CO., S. A.
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BULKLEY, DUNTON PAPER (FAR EAST) CO., INC.
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In New England—
CARTER, RICE & CO. CORPORATION
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ORGANIZATION
295 MADISON AVENUE, NEW YORK 17, N. Y.

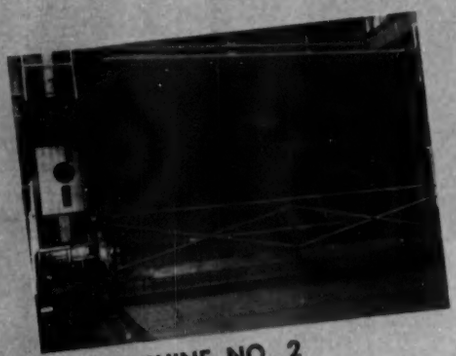
Offices and representatives in 60 cities
in the United States, Europe, Latin America, Africa, and Asia

a success story

at UNION BAG and PAPER CORPORATION

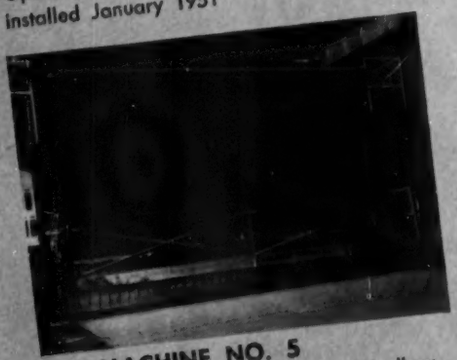
Savannah, Ga.

ON MACHINE NO. 1
Open, gravity type Valley Inlet-Headbox
installed May 1949



ON MACHINE NO. 2
Open, gravity type Valley Inlet-Headbox
installed January 1951

ON MACHINE NO. 3
Open, gravity type Valley Inlet-Headbox
installed May 1950



ON MACHINE NO. 5
Open, gravity type Valley Inlet-Headbox
installed November 1950

ON MACHINE NO. 4
Pressure Secondary Valley Inlet
installed October 1951

ON MACHINE NO. 4
Gravity-type Primary Valley Inlet
installed October 1951

ON MACHINE NO. 6
This new No. 6 machine is equipped with Valley Pressure Primary Inlet. Started up May 1953. Opinion of mill managers is "No. 6 performance is outstanding!"

7 VALLEY INLETS on 6 PAPER MACHINES

*Present capacity 1800 tons daily

It was in May 1948 that Valley was called to Savannah to discuss stock entrance equipment with the Union Bag and Paper Corporation — world's largest paper mill.*

In May the following year, an open, gravity type Valley Inlet-Headbox combination was installed on No. 1 machine. Since that time *all six* of Union's giant 236" machines have been equipped with Valley Inlets — including a seventh secondary installation on machine No. 4.

We believe that this record of seven Valley Inlets installed in *one mill* within a period of four years *speaks for itself*. It suggests that *you too* may profit from a conference with our engineers regarding the possibility of improving the performance of *your own* stock entrance equipment. Your inquiry requesting information or an interview will be given prompt attention.

VALLEY IRON WORKS COMPANY
Appleton, Wisconsin

VALLEY INLETS

THIS $50,000,000 project owned by Puget Sound Pulp & Timber and American Viscose Corp., was to be making its first pulp as this issue went to press. It will start at around 300 tons daily of sulfite dissolving.

At Long Last! — Alaska Makes First Pulp!

ALASKA'S FIRST YEAR-AROUND permanent industry—Ketchikan Pulp Co. —was starting up as this issue went to press, making 300 tons daily at first of dissolving pulp by the unusual magnesia base sulfite pulping and recovery system.

Culmination of over 25 years of effort to start a pulp industry in Alaska, one of the happiest observers of the startup was Frank Heintzleman, now governor of Alaska, but spearhead of that long, often despairing, campaign when he was Alaska forester.

B. FRANK HEINTZLEMAN (left), Governor of Alaska, who spearheaded 25-yr. campaign to bring industry North, saw culmination of his work in startup of Alaska's first pulp mill.

VIC HANER (right), just appointed Manager of Ketchikan Pulp Co., Ward Cove, Alaska. He had been Plant Engineer at Puget Pulp, Bellingham, Wash., for many years.

On eve of startup, Vic Haner was named manager. He also heads up a huge 204-unit housing project for workers at the mill, six miles north of Ketchikan.

Lawson P. Turcotte is president of Ketchikan Pulp. Erik Ekholm is vice president in charge of overall planning and organization and engagement of key personnel. Harold Cavin was chief engineer on construction.

Svarre Hazelquist is general superintendent and Don Pearson, technical director.

A unique automatic Northwest Filter water plant and Sumner Bellingham type hydraulic barking plant were last units being completed. Pulp is formed on a versatile Rice Barton 208 in. Fourdrinier.

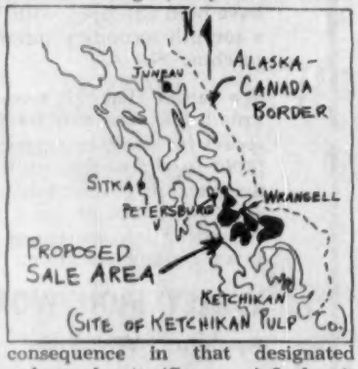
Major units also include a 155 in. Sumner chipper, A. O. Smith stainless steel digesters, Babcock & Wilcox recovery and power boilers, two General Electric turbines, Stebbins tile work throughout, Link-Belt conveyors, Hydraulic Supply evaporators and Impco washing and screening units including a 6 stage bleach plant.

Howard S. Wright and Atkinson Cos. were contractors.

Portlanders to Bid for Alaska Mill

PACIFIC NORTHERN TIMBER CO., Portland, Ore., appears to be the principal prospective bidder for three billion board feet of national forest timber when it is offered at a verbal-bid auction, June 9, 1954, at Juneau, Alaska. An 80-ton capacity pulp mill is contemplated as a result of the sale.

While several other parties have announced interest in establishing another pulp mill in Southeastern Alaska from time to time, only Pacific Northern has shown serious intention of going into the area around Wrangell, only settlement of consequence in that designated pulpwood unit. (See map.) In fact it was this firm's negotiations with the Forest Service for pulptimber and sawtimber which prompted the new advertisement of timber for sale.



The Alaska Pulp Co., a Japanese-owned company which registered incorporation at Juneau last year,

ARTHUR W. GREELEY, Regional Forester, Alaska, calls for bids for Pulp Mill Unit at Wrangell.

believes Sitka is better suited to its plans for a future pulp mill with joint American ownership. However there is no reason to completely rule out the Japanese interests from participating in the Wrangell. Rumors were the Japanese plan has been abandoned.

Robert F. Johnson is president of Pacific Northern Timber Co. and also president of C. D. Johnson Lumber Co., Portland, Ore. He is associated in this venture with Wm. Crooks, president of P. L. Crooks & Co., Portland machinery dealers.

The sale contemplates construction or improvement of a sawmill and building of a small pulp mill. The purchaser will be allowed 50 years to cut and remove the timber.

The terms of the contract will require that by Dec. 31, 1957, the purchaser complete an adequate sawmill; and complete a pulp mill of 80 tons daily capacity or more by Dec. 31, 1962.

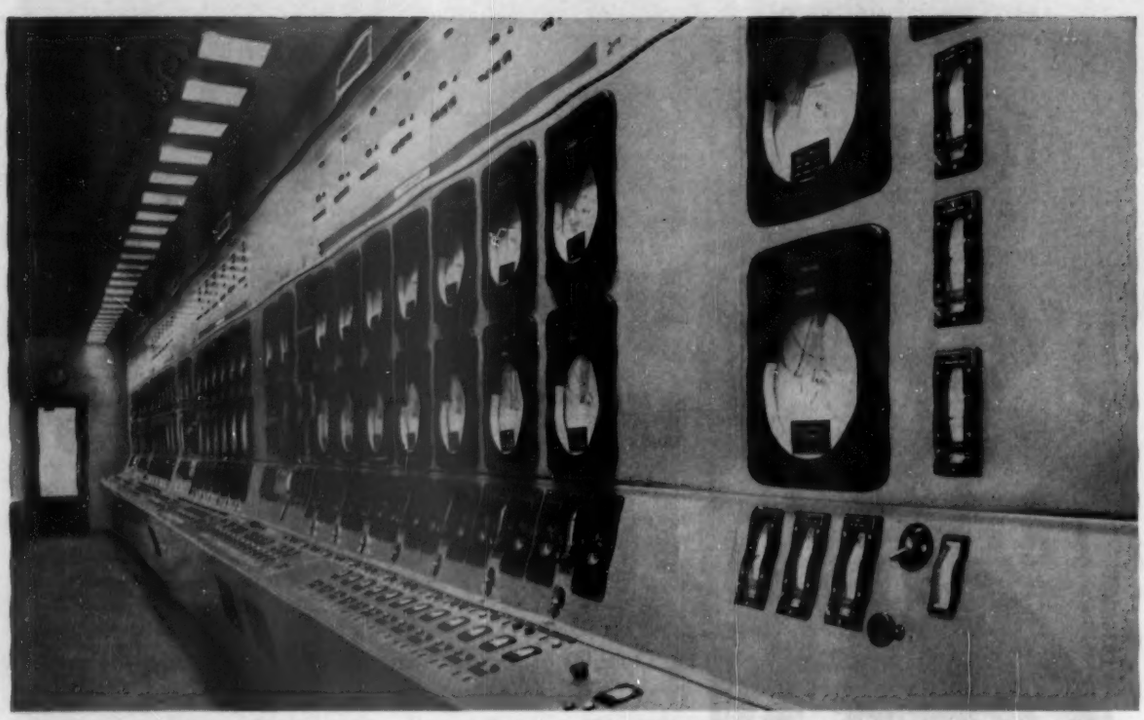
80 years ... until harvest time!

Douglas fir forests, which supply raw material for most of Weyerhaeuser's mill sites, require 80 years to grow a seedling into a tree of mature size. Contrary to popular belief, only a small part of the total program of reforestation is accomplished by artificial planting and seeding. The primary reforestation job is the restocking of cut over land as old growth timber is harvested. This is being done by natural reforestation with seed supplied from blocks of trees reserved during logging and left standing to reseed the adjacent cut-over area. Where natural seed sources have failed, artificial reforestation by sowing tree seeds with helicopters or mechanical seeders is used.

As more and more virgin timber stands are logged in the forests under Weyerhaeuser management, the harvested land begins growing new trees. As the supply of mature timber diminishes, it will be replaced by a steadily increasing volume of new growth.

There are good possibilities of increasing the yield from this land through silvaculture research and intensified forestry and harvesting practices. Thus Weyerhaeuser's twin goals are a *sustained* and *increased* yield of cellulose products from its 2,500,000 acres of timber land.

PULP DIVISION WEYERHAEUSER



Sixty-two foot Main Control Board in Port Alice Bleach Plant.

Port Alice modernization program insures highest quality Alpha Cellulose for world markets

Millions of dollars have been spent to modernize facilities at the Port Alice Division of Alaska Pine & Cellulose Limited. This extensive program insures the manufacture of the highest quality Alpha Cellulose. It's another example of Alaska Pine's ability to keep pace with the exacting demands of world cellulose markets.

ALASKA PINE & CELLULOSE LIMITED
CELLULOSE MILLS AT PORT ALICE AND WOODFIBRE

CELLULOSE • LUMBER • LOGGING • SHINGLES

singled out...

for

Quality

and

PERFORMANCE

SUMNER
LOG CUT-OFF SAW

SUMNER
"NO-MAN" LOG
CARRIAGE

SUMNER
WHOLE LOG CHIPPER

SUMNER
CHIP FEEDERS

SUMNER
REFUSE HOGS

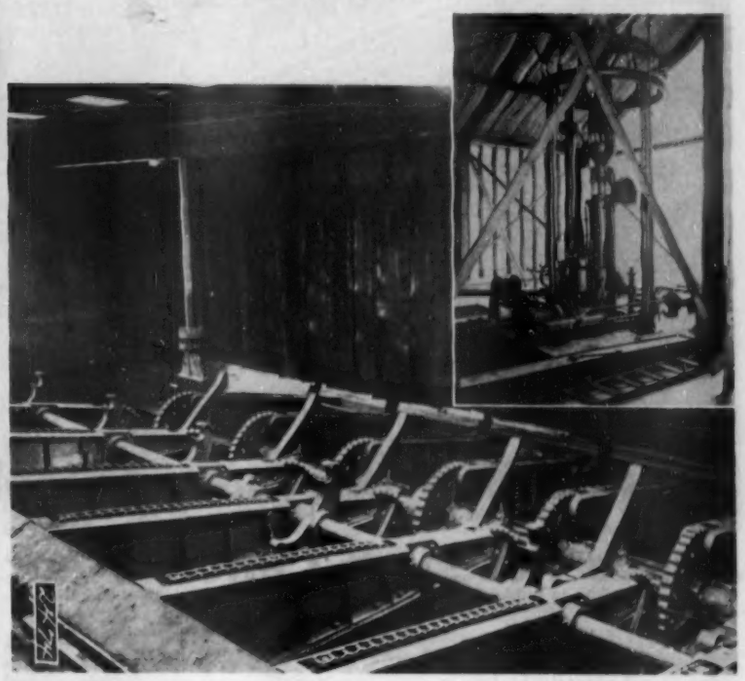
... SUMNER

WOODROOM MACHINERY

was selected for the

PORT ALICE (B.C.) PULPMILL

of Alaska Pine & Cellulose Ltd.



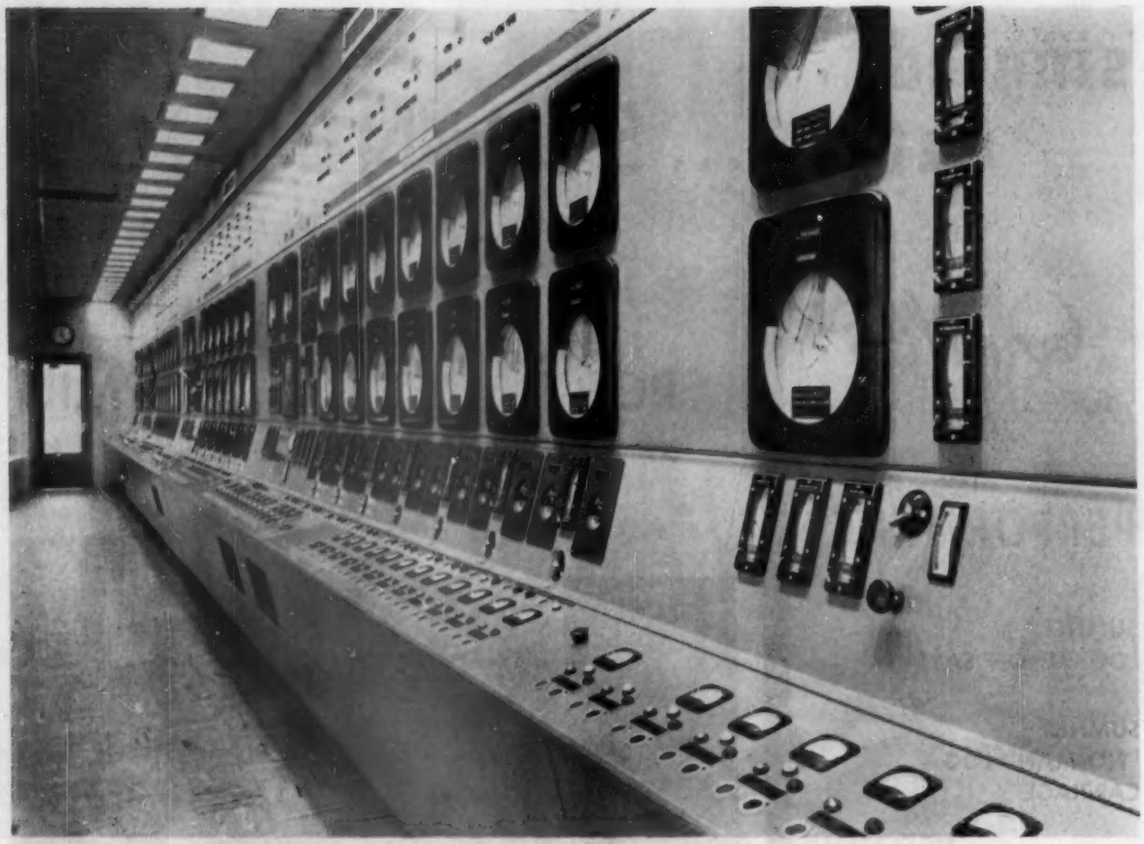
and . . . the BELLINGHAM HYDRAULIC WHOLE LOG BARKER (illustrated above)

This machinery was included in the equipment selected by the Alaska Pine engineers for their modern woodroom in the Port Alice (B.C.) Mill . . . designed, built and installed by Canadian SUMNER.

Manufacturers of a complete range of sawmill and pulpmill equipment.

Canadian SUMNER IRON WORKS LIMITED
3550 EAST BROADWAY VANCOUVER, CANADA

In the U.S.A. . . . Sumner Iron Works, Inc. . . . Everett, Washington



62 FEET OF REMOTE CONTROLS AND FLOW DIAGRAM
THIS MAIN CONTROL BOARD makes Port Alice Bleach Plant a complete pushbutton operation. A flow diagram is across the top. Control panel is housed in glass and concrete on mezzanine.

Alaska Pine Upgrades Dissolving Pulp; Builds Research Center Near Vancouver

PRODUCTION OF SULFITE DISSOLVING pulps of consistently higher quality was the objective of Alaska Pine & Cellulose Ltd., when it embarked on a major modernization at its Port Alice mill, Vancouver Island. According to company executives, that is precisely what has been achieved with its new 6-stage continuous bleach plant, screen room, new power plant, modern wood room and other improvements.

The capacity at Port Alice is now 80,000 tons a year, all bleached to six stages. A substantial increase in capacity of the mill may follow Canadian ratification of a trade pact with Japan giving preference to Canadian woodpulp. Alaska Pine is eager to improve its traditionally active role in Japan's market.

Higher alpha cellulose and uniformity of grade have already resulted from more complete control over such factors as hemi-cellulose content, color, viscosity, ash, lime and cleanliness. But it is characteristic of this progressive British Columbia company that completion of improvements at Port Alice marked only another step in the continuing search for a better product. No sooner had the Port Alice job been finished than President Walter C. Koerner announced another significant advance—establishment of what will be one of the Pacific coast's most modern and extensively equipped chemical cellulose research laboratories.

New Lab Will Be Near Vancouver

Construction has already been started on this latest project which will cost several hundred thousand dollars and be ready for service in August.

At this laboratory, being built near the company's subsidiary Universal Lumber & Box Co. plant, on the lower Fraser River near Vancouver, a staff of 25 trained chemists and technicians under H. deV. Partridge, formerly of Canadian International Paper, will maintain pilot plants for making and testing of yarns produced from wood cellulose by acetate and viscose process, with facilities duplicating conditions in commercial textile mills using Alaska Pine pulps.

The many stages in manufacture of filament yarn, staple fiber, tire cord, transparent film, plastics, etc., will be studied as a means of provid-

ing a closer liaison between the technical staffs of Alaska Pine & Cellulose and the company's world-wide customers.

The company operates at Woodfibre, on the British Columbia mainland, another mill producing dissolving, nitrating and high alpha pulps. This mill was completely modernized before the Port Alice program was launched. Both mills have their own laboratory organizations, but they will later be concentrated at the new centrally located facility which will resemble the finely appointed research laboratory maintained at Sault Ste. Marie, Ont., by Abitibi Power & Paper Co. Eventually this laboratory will undertake experiments at Vancouver covering the whole field of wood utilization.

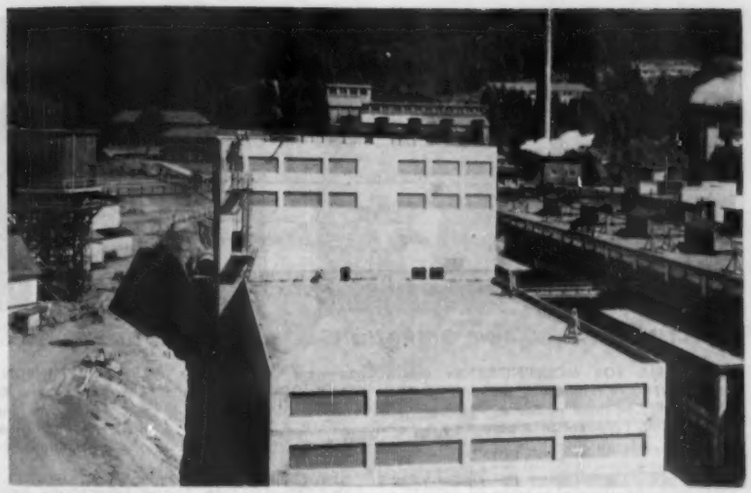
How Partnership Was Formed

All these developments bear the unmistakable imprint of what has proved a spectacularly successful partnership between a British Columbia organization that had specialized in lumber (Alaska Pine Co.) and an Ontario enterprise controlling an empire of pulp and paper mills in Eastern Canada. The two joined forces in 1950 to take over the mills (Port Alice and Woodfibre) formerly owned by British Columbia Pulp & Paper Co. The deal represented the effective combination of two different kinds of know-how, but there was one element that both companies generously shared—imagination, daring and a striving for perfection, or the next best thing.

Abitibi, headed by dynamic Douglas W. Ambridge, has been making pulp and paper many years. With other eastern Canadian mills whose main product was newsprint, Abitibi shared a bitter experience through depression years, and the company's recovery since then under present management is an impressive accomplishment. The rise of Alaska Pine Co., Abitibi's partner in Alaska Pine & Cellulose Ltd., is no less remarkable and it has been encompassed in a brief but exciting span of 15 years.

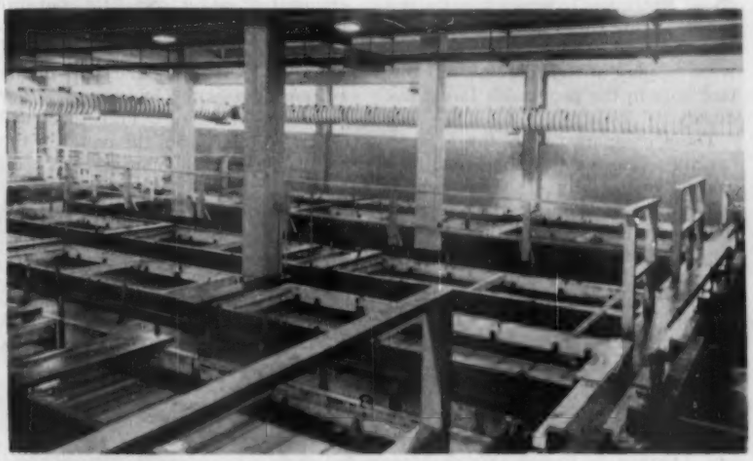
Chance played its part in the formation of Alaska Pine Co. Just before World War II, Leon Koerner, who had risen to prominence as a forester and lumberman in Czechoslovakia, visited Vancouver while on a world tour. He liked what he saw and marveled at the great coniferous forests of the West Coast.

By accident his visit was prolonged and meanwhile Hitler was starting his march. Mr. Koerner



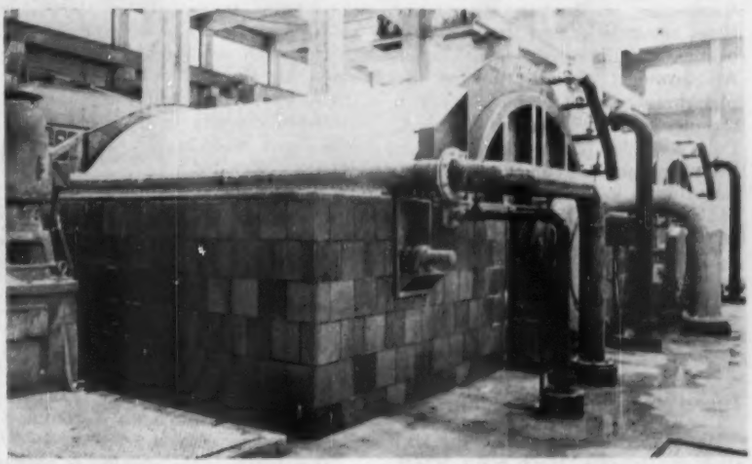
FOREST BACKDROPS MODERN PLANT

FOUR WORKERS LOOK tiny on roof of Port Alice mill's new 6-stage bleach plant. In foreground, screen room for bleached stock. Structures are reinforced concrete.



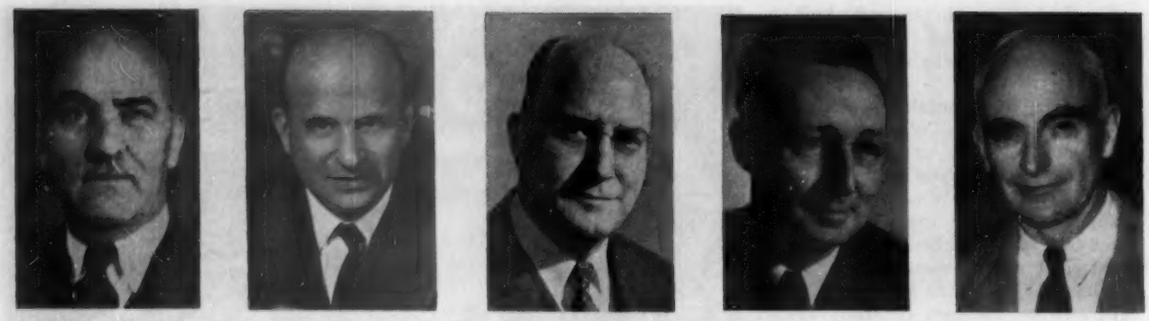
LOOKING INSIDE NEW BLEACH SCREEN ROOM

ALASKA PINE & CELLULOSE built this spacious screen room for new bleach plant. This shows secondary and tailings lines with slushers left center and head flume at right.



BLEACH WASHERS USED IN CONTINUOUS SYSTEM

SHERBROOKE MACHINERIES supplied six big washers for Port Alice bleach plant and Stebbins did all tile work. Here are tandem washers driven by General Electric-Western Gear drives.



DIRECTING ALASKA PINE OPERATIONS

RESPONSIBLE FOR MODERNIZATION and management of Alaska Pine's Port Alice mill are these top executives (l to r): DOUGLAS W. AMBRIDGE, Chairman of Board, Alaska Pine & Cellulose Ltd.; WALTER C. KOERNER, President of Alaska Pine & Cellulose; PAUL E. ROBERTS, Gen. Mgr., Alaska Pine & Cellulose Ltd., Vancouver, B. C., head office; LESLIE CLEMINSON, Manager of New Developments for Abitibi Power & Paper, partner firm of Alaska Pine (formerly Manager of Cellulose Div. of Alaska Pine directing Port Alice modernization); WILLIAM A. BAIN, Chief Engineer of Alaska Pine during Port Alice modernization and now Manager of Cellulose Div.

weighed the uncertainties of returning to his troubled homeland against the potential of entering the lumber business in British Columbia. He chose the latter course, and during the next few years Leon and Walter Koerner and others of their family were to play an increasingly important role in the province's forest industry.

Their company, with three large sawmills and vast timber holdings, was a worthy ally of Abitibi when the opportune time came to pool their fortunes. An indication of what the new Alaska Pine & Cellulose Ltd. has accomplished is the fact that its net sales last year totaled more than $36 millions.

With Mr. Ambridge as chairman of the board, Walter Koerner president and Paul F. Roberts, formerly director of new development for Abitibi, as general manager, the new company's first move was to improve plant facilities. Woodfibre was already in good shape, but the mill at Port Alice, 250 air miles from Vancouver, on Quatsino Sound, still bore reminders that it had been originally built nearly 40 years ago. A thorough job was needed and planning was initiated by W. A. Bain, for many years with the old B. C. Pulp & Paper organization prior to the reorganization, and Les Cleminson, formerly manager of the company's cellulose division, the office now held by Mr. Bain. First story of this interesting Port Alice development appeared exclusively in PULP & PAPER last July, when it was stated that the investment would involve about $7,500,000.

Three Men Run Bleach Plant

Big feature of the mill is the six-stage continuous bleach plant, which is just about as close to being a push-button operation as can be imagined. Only three operators are required per shift to run this important part of the mill.

Because he is necessarily tied to the control center, the chief operator has been provided with every means of communication with his helpers, including the regular mill phone system, a private Gecophone junior telephone (Barvic) and electrical signal system. From the panel in the control center, the operator can open and close any valve or start and stop any motor in the plant.

Flow Diagram on Panel

From a large flow diagram of the process, painted over the full length of the panel and showing all reactors, washers, stock and water pumps, dump chests and other important equipment, the operator can tell at a glance when any particular valve is open or closed by the red or green pilot light that will be flashing in its position. The bleach plant is of reinforced concrete and heating and ventilation equipment were installed by Ross Engineering.

Screened, unbleached stock, regulated by a modified Control Equipment Corp. consistency regulator, is pumped directly to the base of the tile-lined continuous chlorination tower, 70 ft. high and 17 ft. in diameter, built by Dominion Bridge Co. and equipped by Paper Machinery Ltd., with Kamyr type acid-resisting steel circulating pump, allowing retention time of 90 minutes at present rate of production. After shredding, the stock is discharged onto a conveyor belt which delivers pulp at 450 fpm to a battery of six second stage reactors, all of which dump or blow through a common dump header of acid resistant steel.

The dump valve opening is automatically changed throughout the dumping cycle in order to control the temperature of the stock and water mixture entering the dump chest, tile-lined, of 9 tons capacity. Stock is delivered from the chest by Allis-Chalmers vertical pump through butterfly valve and flow meter to the third stage washer, from which it is delivered by another vertical pump to two washers in series, with 400 gpm fresh water showering each washer to insure well washed stock.

After 12 to 2% dilution the pulp is dropped into the fourth stage reactor, and the entering pulp flows down through the larger center chamber and up through the outer ring to the top, where it discharges, with impellers of special design creating agitation. After progression through this chest, the stock overflows to a booster pump which lifts it to No. 5 washer, which in turn discharges to a conveyor belt at high consistency, delivering the stock in sequence to seven batch type reactors for final hypochlorite bleaching.

Using internal dilution water only, reactors are dumped automatically, the diluted stock dropping to the dump chest without dump header. Stock is delivered from the fifth stage dump chest to the final washer and discharged to the bleached stock chest after dilution from 12 to 4%.

Batch Process for Bleach Liquor

Bleach liquor is made up in the mixing plant by a batch process. Sherbrooke Machineries supplied six vacuum washers and these are used continuously. Washer vats are specially built of tile reinforced with concrete, tile work throughout the plant being by Stebbins Engineering. A 100 hp 1800 rpm vertical General Electric motor with 1800 to 25 reduction Western Gear Works reducer is used to circulate 8 tons of pulp through a reactor every 11 minutes.

Main control board or panel, as-

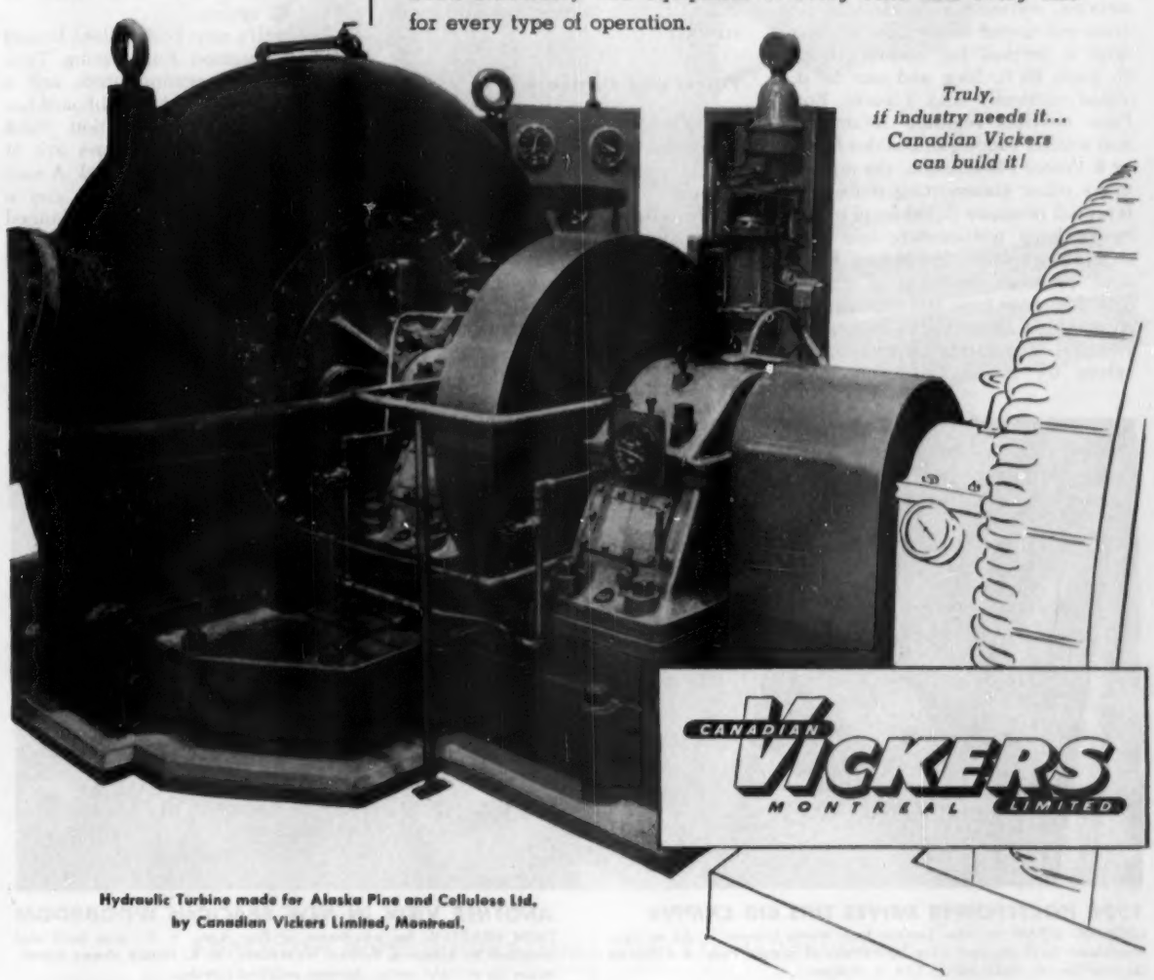
THIS MILL HAND HAS A *Big Thirst!*

Every day it changes millions of gallons of water into power at the Port Alice Mill of Alaska Pine and Cellulose Ltd. on Vancouver Island.

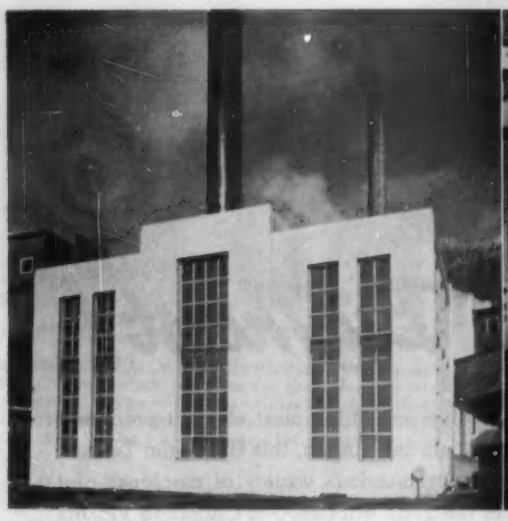
Designed and built to serve one of the most efficient producers of highest grade sulphite pulp in Canada, this Hydraulic Turbine is another example of the tremendous variety of machines and equipment turned out in the giant work shop of Canadian Vickers in Montreal.

Regardless of which industry holds your interest, Canadian Vickers have the skill, experience and facilities to design and build machinery and equipment of **every** kind and **every** size for every type of operation.

Truly, if industry needs it... Canadian Vickers can build it!



Hydraulic Turbine made for Alaska Pine and Cellulose Ltd. by Canadian Vickers Limited, Montreal.



HOUSES TWO BOILERS AND TWO GENERATORS
NEW POWER HOUSE BUILDING at Port Alice houses two Combustion Engineering steam generating units and two Elliott turbine generators with Bailey supplying controls and meters.

BIG CONTROL PANEL FOR TWO C.E. BOILERS
POWER HOUSE controls and meters were supplied by Bailey Meter Co. at Port Alice and they serve the new Combustion Engineering Nos. 14 and 15 steam generating installations.

sembled by Cemco Electrical Engineering, extends in a straight line from end to end of the control center with a vertical top section. It is 9 ft. high, 62 ft. long and can be divided vertically into 5 parts. Foxboro controls regulate steam flow and washer functions. Besides Fischer & Porter Flowmeters, the mill has many other transmitting units—differential pressure liquid level meters by Foxboro, temperature and pressure transmitters by Moore Products, pressure switches of Barksdale-Meletron type and mechanically operated Minneapolis-Honeywell switches. Regulating devices include valves by Crane Co., Annin and Continental Equipment. Raymond P. Hill of Seattle was consultant on instrumentation.

Power and Recovery

W. O. Stevens, of Seattle, advised the company on its power and water supply system, source of which is Victoria Lake. As a hill intervenes between lake and mill, a pumphouse was installed with two 14,000 gpm Byron Jackson units and 900 hp vertical General Electric driving motors. For power recovery there are a 3500 hp Vickers water turbine and 2500 kva Elliott generator. The Woodward governor speed control is set above synchronous speed at about 62 cycles.

The mill's new boiler plant houses two Combustion Engineering Type VU steam generating units, and a new totally inclosed switchboard has been installed. Two Elliott back pressure turbine generators are at the new operating floor level. A second boiler has been added and a third high pressure unit is planned to take care of future plant expansion together with a third turbine generator. The Sirocco forced and induced draft fans on both boilers are motor driven, and three Warren feed pumps supply the two 600 psig boilers, two being motor driven and

1200 HORSEPOWER DRIVES THIS BIG CHIPPER
LOOKING DOWN on new Sumner Iron Works chipper in the modern woodroom built for Port Alice operations of Alaska Pine. A 1200 hp General Electric motor drives 175 in. chipper.

ANOTHER VIEW IN NEW SPACIOUS WOODROOM
TWIN HEADSAW for woodroom at Port Alice, B. C., was built and installed by Letson & Burpee, Vancouver, B. C. Picture shows breakdown rig at right center. Sumner supplied carriage.

value in a fine product

reflects the experience and skills of its makers.

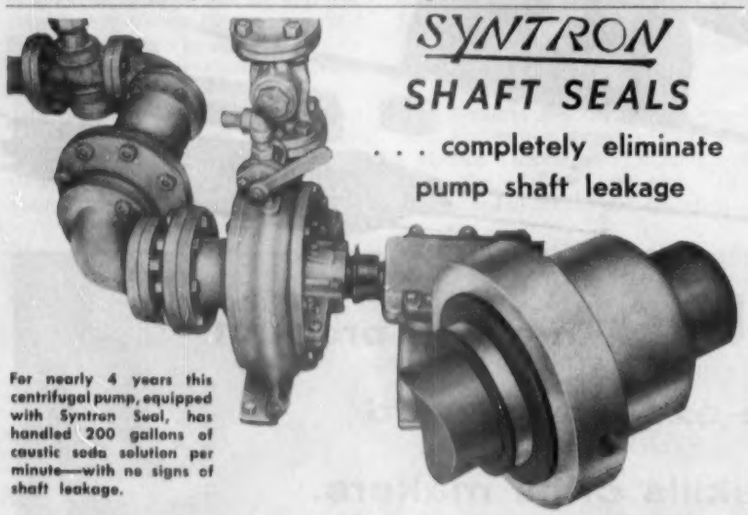
value in Fourdrinier wires is a matter of record ... paper quality and production records in mills throughout America reflect the fact that Appleton Wires are Good Wires!

APPLETON WIRE WORKS, INC., APPLETON, WISCONSIN

ALASKA PINES PERSONNEL (l to r): E. DeLUCA, Asst. Mgr. Cellulose Division; R. H. (BUCK) RICHMOND, Port Alice Plant Mgr.; H. R. WRIGHT, Chief Engr.; L. K. BICKELL, Chief Chemist; K. D. WATT, Electrical Engr.

J. W. FRASER, Plant Supt.; R. DEKKING, Asst. Chief Engr.; K. T. M. HALL, Master Mechanic; J. GILMOUR, Chief Electrician; C. J. ENEVOLDSEN, Instrument Engr.

R. S. WILSON, Plant Chemist; V. S. BRIGHT, Res. Engr.; W. S. INGLIS, Chief Steam Engr.; C. A. BROOKS, Wood Plant Supt.; R. C. ROBSON, Chief Draughtsman.



SYNTRON
SHAFT SEALS
. . . completely eliminate pump shaft leakage

For nearly 4 years this centrifugal pump, equipped with Syntron Seal, has handled 200 gallons of caustic soda solution per minute—with no signs of shaft leakage.

Requiring almost no maintenance even after years of continuous service, Syntron Seals assure positive, low cost sealing of gases and liquids around the rotating shafts of compressors, pumps, turbines, etc. Available in models and sizes for practically every industrial installation, these mechanical, anti-friction seals are self-lubricating—eliminate repacking expense—are easy to install.

Write today for complete catalogue data—Free

SYNTRON COMPANY
659 Lexington Avenue Homer City, Penna.

the third by an Elliott turbine. Bailey combustion control and metering equipment is used.

The wood plant, dominated by Sumner equipment, is designed to handle average logs at the rate of 30,000 fpm per hour. A concrete log haul with manganese steel chain is motivated by a 60 hp induction motor through an Airflex clutch and Reliance reduction unit and roller chain drive.

Logs are cut to 24 ft. lengths, and from the transfer deck are fed into a Bellingham-type Sumner hydraulic barker served by an 8-stage Bingham pump driven by an 800 hp 1800 rpm Westinghouse motor through Western Gear speed increaser.

There is a 175-in. Sumner chipper in the wood room driven by a 1200 hp motor direct connected through a Thomas coupling. The chipper discharges onto a troughing belt conveyor system feeding into wooden surge bins that feed five Allis-Chalmers 5 by 14 ft. chip screens. Slivers are returned to a 25-in. Diamond hog used as a re-chipper. All waste is converted into fuel by two 48-in. Sumner hogs and further de-watered in an American Defibrator bark press.

Key Personnel

Plant manager at Port Alice is H. R. (Buck) Richmond. Victor S. Bright is resident engineer, with Ronald S. Wilson, plant chemist and Karl T. M. Hall, master mechanic, James Gilmour, chief electrician. Superintendent of the wood room is Charles A. Brooks, chief steam engineer, Bill Inglis, Chris J. Enevoldsen, instrument engineer. Bleach plant tour foremen are Lorne Smith, Jack Morrison and Joseph Fraser.

At Alaska Pine's fine new eight-floor office building in Vancouver with Mr. Bain as cellulose division manager are E. deLuca, assistant manager; H. R. Wright, chief engineer; R. Dekking, assistant chief engineer; L. K. Bickell, chief chemist, and K. D. Watt, electrical engineer. R. C. Robson is chief draughtsman.

Weyerhaeuser Machine And Pulp Additions

Construction is underway at the Longview, Wash., Mill of the Pulp Division, Weyerhaeuser Timber Co., for addition of a 165 in. Beloit Fourdrinier machine to manufacture neutral sulfite corrugating medium and various unbleached kraft papers and board. Also additional pulp mill facilities.

L. H. Hoffman Co., Portland, Ore., is general contractor. Completion is set for May 1955.

Our congratulations to

Alaska Pine & Cellulose Ltd.

on completion of the conversion at

Port Alice, B.C., Canada

We are pleased to have participated
in supplying
60" Twin Head Saw Husk (right)

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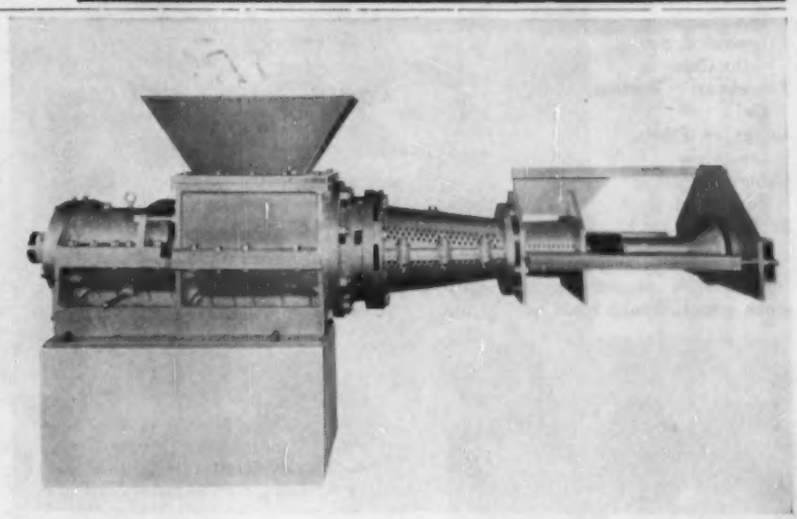


The Defibrator Bark Press for continuous dewatering of wet bark is made of highest quality stainless and steel castings. Operating data below taken from presses now in regular operation in pulp mills.

Capacity: 110 Tons/24 hrs., Bone-dry basis
Water Content of Dewatered Bark: 52—55%
Power Consumption: 45 h.p.

AMERICAN DEFIBRATOR, INC. CHRYSLER BUILDING NEW YORK 17, N.Y. West Coast: A. H. Lundberg Orpheum Building, Seattle, Wash.

Competitions in South and Far West Show "Safest" Mills

Rayonier Div. in West Perfect for 2½ Yrs.

RAYONIER OLYMPIC Division at Shelton, Wash., has achieved a perfect safety record for 3 years out of 8!

At the 8th annual Joint Labor Management Safety Conference, Apr. 1-2, in Seattle, this Rayonier aggregation won (1) the all-Coast Otto R. Hartwig safety award. (2) the Washington Governor's safety trophy and (3) the Labor-Management Association's 5-Year award for the state.

The Rayonier unit's last perfect string of safety days has been running (up to press time) since Sept. 1951—over 2½ years. Its previous perfect year was 1945. The Olympic Division is not to be confused with the Rayonier Shelton Division pulp mill, which has also been doing well by safety records, having completed on Apr. 5 a full calendar year without a lost-time accident.

For a five year period these are the Coast "Big Six":

	Thousands of Man-hrs.	*Frequency Rate*
Rayonier, Research Div., Shelton	1,224	1.63
Fibreboard, So. Gate, Cal.	2,541	2.75
Fibreboard, Vernon, Cal.	6,598	3.94
Longview Fibre, Longview	17,588	4.04
Crown Z, Port Townsend	7,362	4.48
St. Helens (Ore.) P & P	6,200	5.51

Rayonier's record was the only score which would have beaten the amazing mark hung up by Publishers' Paper Co., Oregon City, Ore. Totalling 1,501,418 man-hours exposure, this firm recorded only one disabling injury in 1953 for a frequency rate of .67, as against their 1952 mark of 6.55.

PUBLISHERS' PAPER Co. ranked tops for all Pacific Coast pulp and paper mills in the Labor-Management competition and also won second place in a national contest for mills of its type. TOM BURKE, (left) Natl. Safety Council Western exec, presents plaque here to CHARLES S. HOOD (middle), Plant Safety Director, and CARL E. BRAUN (right), Vice Pres. and Mill Mgr.

IN TOP VIEW: DR. EDWIN L. LOVELL receives safety trophy from Gov. LANGLIE of Washington—one of three prizes for Rayonier Olympic Div., Shelton, Wash., with a perfect record for 2½ years.
In lower row (l to r): A. F. ARMSTRONG, Scott's West Coast Personnel Director, says 36% of Coast mills have professional nurses; BOYD WICKWIRE, Personnel Mgr. of Longview Fibre, chats at head table with RAY BAKER, Toastmaster and Mgr. of Pulp Mills for Weyerhaeuser Timber Co. in Longview.

Washington Governor Arthur B. Langlie said "safest place to be in the state of Washington today is in one of our industrial plants."

WOMEN—HANDLE WITH CARE

MISS SHEILA HUMBER Asst. to Personnel Mgr., Longview Fibre Co., former Major Humber of Marines—talked at Seattle safety meeting on "WOMEN—HANDLE WITH CARE."

In the eight years since the inception of these joint labor-management safety conferences, the accident frequency progress record of the member mills reduced their frequency rate from around 35.00 to 7.53 in 1953 (American Standards Assn. ratings). In 1953, their rate was down to about half the Bureau of Labor Statistics U.S. average.

Ray Baker, Weyerhaeuser manager of pulp operations at Longview, was chairman of the banquet, attended by 272, with John Sherman, v.p. of Pulp, Sulfite and Paper Mill Workers, presenting trophies and the governor making the address.

A point made at sessions was regarding growth of industrial nursing. A. F. Armstrong, Scott's west coast personnel director, said it goes hand in hand with safety and is part of better human relations.

He said facilities and expense for industrial nursing, with a competent professional nurse, run less than $15 a year per employe. He said 36% of member mills have nurses.

Leaders in Southern Pulp and Paper Industry

THE MEAD CORP., Harriman, Tenn., with 454,824 man-hours exposure, led 57 Southern pulp and paper mills in safety during 1953 with a perfect record.

This was revealed in a report issued by the Southern Pulp and Paper Safety Association, which showed Ecusta Paper Corp. and Gulf States Paper Corp. leading larger mills.

The average for all 57 mills reporting was 8.52, substantially better than 1952's 9.78 and 1951's 10.13, and showing consistent improvement.

There were 23 mills with frequency rates under 5. There were six with rates over 20.

Here are 12 leaders (all those under 3):

Mill	*Thousands of Man-Hrs.*	*Frequency*
1. Mead, Harriman	454	0.00
2. Ecusta Paper	2,347	0.42
3. Gulf States	3,595	0.55
4. Crossett Paper	1,611	0.62
5. Brunswick P & P	1,435	1.39
6. Buckeye, Memphis	1,214	1.65
7. Champion, Canton, N.C.	5,898	2.03
8. Flinkote, Meridian, Miss.	923	2.17
9. Coosa R. Newsprint	1,737	2.30
10. Chesapeake Corp. of Va.	1,260	2.38
11. Nat. Cont. Corp., Jacksonville	1,222	2.45
12. Mead, Kingsport, Tenn.	3,001	2.66

Consolidated Marks 50th Year With Tours

Consolidated Water Power & Paper Co. will observe its 50th Anniversary with a five-day Open House May 6-11.

Stanton W. Mead, president, said observance will include tours of the main office and Wisconsin Rapids mill where paper was first made May 29, 1904.

Invitations have been mailed to the firm's 4000 employes and the public.

COLOR PHOTOGRAPH BY JOHN S. HOLYOKE

BELOIT IRON WORKS · PAPER MACHINERY · BELOIT WIS. U.S.A.

216″ BELOIT MACHINE built for West Virginia Pulp and Paper Company's mill at Covington, Virginia. Efficient production of high-quality food-container board is helped by features such as air-cushioned headbox, specially designed press section, air guides for wire and felts, heavy-duty pneumatic reel, and high-speed shear-cut winder. The Beloit Differential Drive holds accurately selected draws without variation, thus raising sheet tests and sharply cutting machine breaks.

GEORGE CROPPER, Manager of Shelton (Wash.) Division of Rayonier, which has operated one year with perfect safety record.

Shelton Pulp Mill Completes "Perfect" Year

Rayonier's Shelton, Wash., pulp mill also has an enviable safety record. While the Olympic Division at Shelton was winning three trophies for safety in 1953 in the Labor-Management Conference competitions, the pulp mill on Apr. 5 completed a full year of operation without a lost time accident.

Clyde B. Morgan, president of Rayonier, sent teletype congratulations to George Cropper, Shelton plant manager on the safety record, even more impressive since this was once considered a highly hazardous mill.

An intensive safety program was headed by R. L. Paulson, safety supervisor.

Backing up Mr. Paulson were labor union local executives and the key mill staff men including Mr. Cropper, Winston Scott, assistant manager, Ed J. McGill, general superintendent, and L. C. Van Arsdale, resident engineer.

"SAFEST" COAST MILLS

Ten leaders for 1953 of 38 reporting mills on Pacific Coast:

	Thousands of Man-Hrs.	*Frequency Rate*
1. Rayonier, Shelton, Wash.	277	0.00
2. Publishers' Paper, Oregon City	1,501	0.67
3. Fibreboard, Pt. Angeles	447	2.23
4. Crown Z, Port Angeles	1,321	2.27
5. Crown Z, Lebanon, Ore.	380	2.63
6. Weyerhaeuser, Longview	1,762	2.84
7. Crown Z, Los Angeles	526	3.80
8. Fibreboard, Vernon, Cal.	1,293	3.86
9. St. Helens (Ore) P & P	1,288	3.88
10. Crown Z, West Linn, Ore.	2,899	4.14

STATE AND COAST

Oregon—7 mills	7,578	4.75
Washington—20 mills	24,391	6.92
California—11 mills	10,359	11.00

Oregon improved 47% from a 7.50 rate in 1952; Washington improved 10% from 7.71 and California worsened 27% from 8.67. The total improved 4% from 7.77 in 1952. Total rates were 9.85 in 1951; 8.67 in 1950; 11.95 in 1949; 14.83 in 1948; 25.86 in 1947; 33.34 in 1946 and 38.99 in 1945.

PULP "RECIPES" TO SUIT YOUR "TASTE"

A PULP MANUFACTURING executive of a New England mill saw the Weyerhaeuser "recipe" which was published in our March issue for a ton of bleached kraft pulp.

"Now how about one of sulfite pulp?" he asked.

Weyerhaeuser Timber Co. was very happy to oblige. Here is its "recipe" for one ton of unbleached sulfite (of course, every cook *has* to vary a recipe to suit his "taste"):

275 lbs. of sulfur.
350 lbs. of limerock.
2 tons of dry wood.
60,000 gals. of water.
225 kw. hrs. of electricity.
9,000 lbs. of steam.

In case you forgot, the "recipe" for one ton of bleached kraft pulp:

2.6 tons of dry wood.
130 lbs. of salt cake.
55 lbs. of lime.
95 lbs. of burnt lime.
20 gals. of fuel oil.
220 lbs. of chlorine.
75 lbs. of caustic soda.
18,000,000 btu's. of steam.
535 kw. hrs. of electricity.
65,000 gals. of filtered water.

C-Z Legal Spokesman Answers Monopoly Charge

A Crown Zellerbach Corp. legal spokesman told PULP & PAPER that C-Z will conclusively disprove a Federal Trade Commission charge that its acquisition of St. Helens Pulp & Paper Co. stock violates the Clayton Act—Section 7, which was amended in 1950 to prohibit acquisition of assets of competing organizations where the effect may be to create a monopoly or substantially lessen competition.

Indicating what will be the C-Z defense, the spokesman said:

"The acquisition of St. Helens stock will be a factor in economic development of the Northwest, and is a reflection of competitive processes of the economy. Crown Zellerbach is spending $15,000,000 to increase production at St. Helens by 70,000 tons of additional products annually. This will help the state and city, giving employment to many citizens."

Purchasing Agents Named At Nine Mead Mills

In connection with the recent announcement of appointment of George Brombacher, in Chillicothe, O. (late issue of PULP & PAPER), as new director of purchasing for all Mead Corp. mills, the company announced also that the following purchasing agents handle procurement of materials and supplies at Mead's various divisions:

A. T. Krug, Chillicothe, O.; W. R. Gilmer, Kingsport, Tenn.; W. B. Younger and Hubert Taylor, Lynchburg, Va.; Stack Smith, Escanaba (Mich.) Paper Co.; J. Frank Key, Columbian (Bristol, Va.-Tenn.); J. O. Boesinger, Nashville, Tenn.; Roger Richey, Harriman, Tenn.; Joe Dietz, Sylva, N. C.; William Marshall, Wheelwright (North Leominster, Mass).

Some Facts About A Now "Famous" Rumor

Because of the persistency of rumors that Kimberly-Clark and Brown Co. were to be merged—rumors that have arisen periodically over two years—PULP & PAPER went direct to these companies for information.

L. F. Whittemore, president of Brown, said there have been no negotiations of any sort.

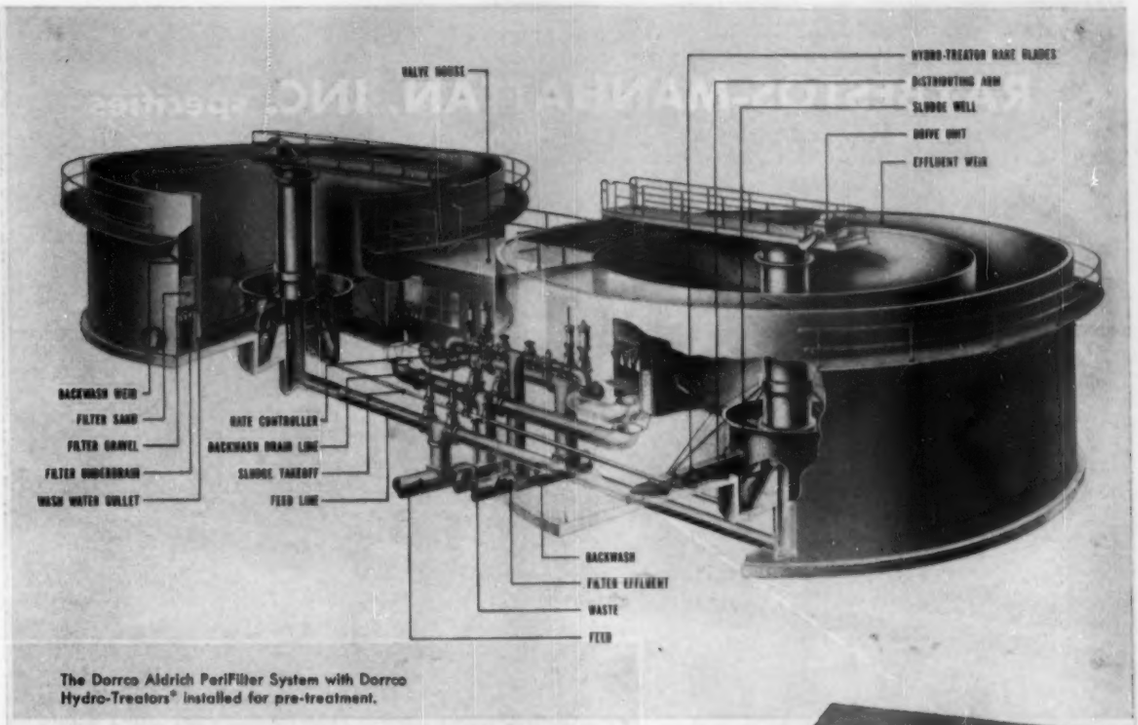
John R. Kimberly, president of K-C, said there is not, and never was, anything to the rumor.

Incidentally, a humorous side note—Mr. Kimberly and Mr. Whittemore got together recently and quizzed each other on the possible source of the rumor. Neither could get any information from the other!

KEY POSTS WITH SUPPLIERS

WALTER P. MURRAY (left), new Sales Mgr. for Mt. Hope Machinery Co., makers of handling devices, Taunton, Mass. With the company since 1949, he has been Sales Engineer and Executive Engineer. He specialized in industrial engineering at Northeastern U. and M.I.T.

MILLARD D. SHRIVER (right), appointed General Sales Mgr. of Panellit, Inc., with direction of Panascam and Panalarm sales as well. He was Sales Mgr. for Panellit. Mr. Shriver served the paper industry while 10 years with Bristol Co.



The Dorrco Aldrich PeriFilter System with Dorrco Hydro-Treators® installed for pre-treatment.

New System Cuts Water Filtration Plant Construction Costs Up to 40%

40%

Pulp and paper producers can realize savings up to 40% in water filtration plant construction costs . . . and at the same time get improved operation compared with conventional methods. Both advantages are now possible with the Dorrco Aldrich PeriFilter System. A single PeriFilter consists of a Dorr pre-treatment mechanism surrounded by an annular rapid sand filter and two or more of these dual units are usually manifolded to form the System.

Here's how the PeriFilter cuts costs . . . A unique design permits installation of both pre-treatment unit and filter in the same tank. Valves and piping are greatly simplified. Reduced head losses and simple operation add up to lower operating costs.

Here's how the PeriFilter improves operation . . . Transfer from pre-treatment unit to filter is over a submerged weir so floc breakup is practically nil. Maximum water depth over the filter eliminates air binding. A variety of pre-treatment mechanisms are available for every water treatment need.

We're sure you'll want more information on this new development in water treatment practice. Bulletin 9042 describing the Dorrco Aldrich PeriFilter System will be sent on request, and a Dorr Engineer will gladly supply you with additional information. THE DORR COMPANY, Stamford, Conn. *In Canada:* 26 St. Clair Ave., E., Toronto 5.

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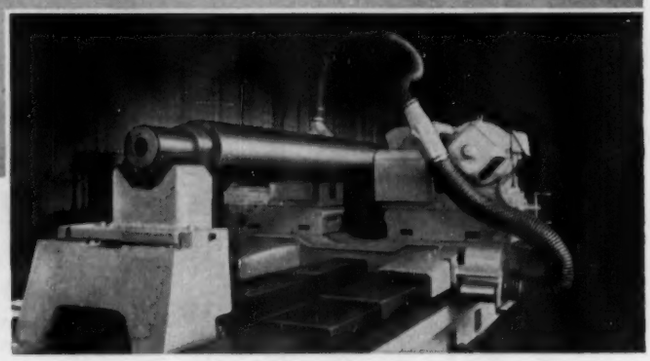

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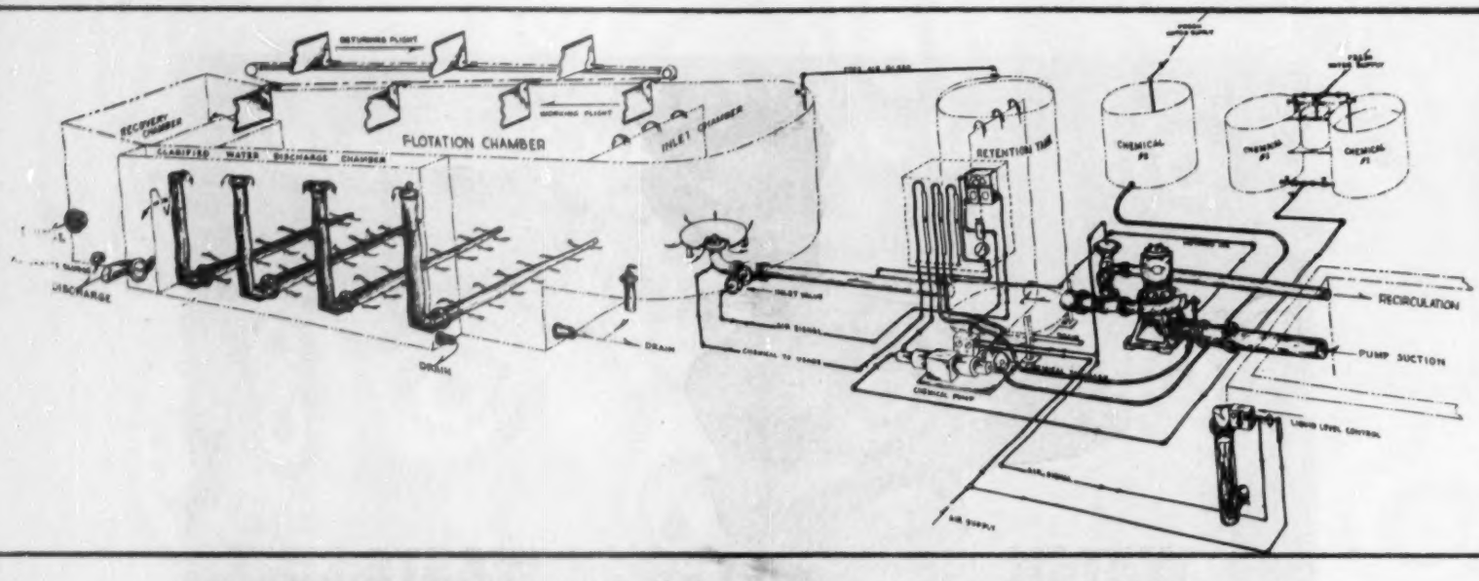

"Man-Bites-Dog" Story Climaxes New Waste Recovery in Michigan Mill

"MAN-BITES-DOG" is news and so is a sportsman's club award to a paper mill for efforts in reducing stream pollution—real good news. That's just what happened in Three Rivers, Mich., when recently visited by PULP & PAPER. Not just one, but two board mills were given handsome engraved plaques before a special meeting of the county Sportsman and Conservation Club.

It hadn't been so long ago that both Rocky River Paper Mills, Inc., and Constantine Board & Paper Co., both on the St. Joseph River, were targets of sportsmen when they were trying to find an economic solution to their problem.

In accepting his plaque, John C. Plantefaber, president of Rocky River, good-humoredly recalled this fact. The other plaque went to Frederick G. Weir, president of Constantine.

Mr. Plantefaber urged sportsmen and citizens generally to "have patience and consideration for industries facing the task of solving pollution."

He told them his company spent "thousands of dollars to reduce pollution, originally planned for other mill improvements to meet competition."

He might well have added that considerable engineering and research were involved in achieving development of a new recovery system at his mill—actually a "dissolved-air" flotation method of cleaning up effluent. It was in 1952 that Rocky River installed a 1,000 gpm Bulkley, Dunton Processes Colloidair separation system, now represented by Ronningen-Petter Co., Vicksburg, Mich. Tiny air bubbles occlude particles as they rise, and the waste is floated and skimmed off the top.

The Michigan State Water Resources Commission, through its chief engineer, Loring F. Oeming,

WHERE SOLIDS DROP INTO RECOVERY CHAMBER

TOP OF COLLOIDAIR at Rocky River Mills is shown here. Parallel to this walkway can be seen the cup-like tops of the four upright pipes seen at left side of the drawing, published elsewhere with this article. Air bubbles occlude particles as they rise. Waste is floated and skimmed off the top of the chamber at left. HELMER RONNINGEN is pointing to the chamber; PRES. JOHN PLANTEFABER kneels in front of him.

HERE IS DRAWING OF BULKLEY, DUNTON COLLOIDAIR SEPARATORS IN ROCKY RIVER MILL.

Air bubbles (top of four upright pipes at left) occlude particles as they rise, and waste is floated (flotation chamber) and skimmed off the top. Improved recovery system principally designed by Dr. Robert A. Baum of Bulkley, Dunton Processes, Inc. At right are Fairbanks Morse water pump and Hills-McCanna chemical pump.

Explanation of Drawing

Effluent from paper mill enters concrete chest; then into Fairbanks Morse pump suction. A liquid level control maintains height in concrete chest by recirculation so as to equalize amount treated with flow from mill.

Air is injected by air injector system to pump suction; and water with air enters retention tank under pressure of 30 to 50 psi. Most of air is dissolved in water. Any which does not dissolve is bled off through free air bleed.

Water and dissolved air leaves tank through automatic pressure-regulating valve, which obtains its signal from a pressure controller. Mill water then enters bottom of the flotation unit's inlet chamber; through a nozzle; and around a circular diffusion plate; then overflows a weir into flotation chamber. Effluent is delivered to the chamber with very little turbulence.

Reduced pressure on water, as it passes through pressure regulating valve and enters inlet chamber of Colloidair, causes dissolved air to be released as a myriad of minute bubbles. As these rise to the surface they float the suspensoids by occlusion. Skimmings to far end, into recovery chamber.

Clarified water is removed through parallel outlet tubes on bottom of flotation chamber, through telescopic riser tubes, adjustable for regulating liquid level.

Three chemical tanks are used; one for liquid alum, one for hide glue or silicate, and third for mixing. Normally about 6 to 9 ppm of hide glue is mixed with water dispersible rosin size and alum added to bring to a pH of 7. Alum is added to mill effluent to keep pH under 7; as it usually flocs best with pH of 5.5 to 6.5. Hide glue solution is added as water enters circular diffusion plate.

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cited Rocky River as "now ranking near the top among mills of the state in waste control performance." He said that the B-D Colloidair system reduced fiber loss to 41 lbs. per day, only 0.054% of production, well below the state's required 1%.

Just a few hours before his appearance before the sportsmen, Mr. Plantefaber showed PULP & PAPER editors the system which he said "provides us with cleaner water now than that coming out of the river."

Dr. Robert A. Baum, of Pasadena, Calif., a technical director in the paper industry in Pomona, Calif., before he joined Bulkley, Dunton, was principal creator of the improved B-D system and its greater efficiency over previous units.

Handling the engineering and installation of the B-D Process was Ralph Berman, B-D Processes representative in Chicago, with subsequent assistance on operation by Helmer A. Ronningen and William Petter of Ronningen-Petter Co.

THEY DESCRIBE B-D SYSTEM

JOHN C. PLANTEFABER (left), President of Rocky River Paper Mills, whose company was praised by both a Sportsman's Club and Michigan state authority for cleaning up mill effluent with highly efficient B-D Colloidair process.

HELMER A. RONNINGEN, P.E. (right), head of mill supply and equipment manufacturing firm of Vicksburg, Mich., represents Bulkley, Dunton Processes, Inc., designers and manufacturers of the process.

RESULTS OF WASTE TREATMENT PROCESS AT ROCKY RIVER PAPER MILLS INC.

This table shows what has happened at Rocky River Paper Mills, Three Rivers, Mich., after installation of Bulkley, Dunton Colloidair recovery system. Figures for Feb. 1951 were recorded prior to its installation. Those for Jan. 1953 show results afterward. A remarkable reduction in pounds of B. O. D. and solids discharged to surface waters is shown:

	Jan. 1953	Feb. 1951	Percent Reduction
Production	40.41	41.1	—
Flow—millions gals.	0.179	1.14	84.5
Gals. waste per ton product	4,450	27,783	84.0
Lbs. B.O.D. to river	275	1,001	72.0
Lbs. suspended solids to river	78	2,900	97.5
Lbs. volatile suspended solids to river	41	1,475	97.5

Drawing on preceding page shows the general arrangement and with it is a description of the process.

Rocky River mill, built in the first years of this century, was the original No. 1 mill of Eddy Paper Corp., Kieckhefer affiliate, which operates a mill at White Pigeon, Mich. Rocky River employs 80, makes 50 tons a day of bristols, tags, folding boxboards, and colored specialties on a 74-in. trim 6-cylinder Beloit machine. Big items are frozen food and meat board and paper plates, and in this respect the reclaiming and purifying of water used might be regarded as of some significance. But, of course, the papermaking process itself is purifying.

John Plantefaber was born and raised in Kalamazoo, 25 miles north of his mill, where he sold pulp and rag cuttings to the paper mills. Later he was in folding cartons business in Chicago. Seven years ago Mar. 31 he and associates acquired Rocky River. David H. Greene, chairman of Otsego Falls Paper Mills, is vice president; R. J. Suess, president of Otsego Falls, is treasurer, and J. Gus Liebenow is secretary. Neil K. Plantefaber, a nephew of John, was purchasing agent but recently took over an agency to sell chemicals to mills in the area and was succeeded as p.a. by Clark Smith, formerly with Eddy.

Floyd Fox, veteran general superintendent of the Rocky River mill, who has worked there all his career of over 38 years, has had an important role in planning and carrying out many improvements in the last seven years. The mill had no power plant until after Mr. Plantefaber became its head.

A total of 18 Bagley & Sewall 48 in. pressure dryers were added, bringing the total to 74. A new 60 in. Manchester Machine rewinder was installed. It is driven with a Horton air clutch. These additions served to bring up production from 35 to 50 tons daily.

Now the screen room is being rebuilt and new equipment installed. Six rotary Bird Machine screens will replace flat screens. Each cylinder of the machine will be served with a Bird screen, including Bird showers with them.

Prior to installation of the B-D Colloidair system, Ronningen-Petter Co. supplied Broughton low volume high pressure oscillating showers serving the machine and quick-coupling, non-short-circuiting Ronningen filters to clarify incoming raw water and a booster pump to assure clean high pressure water for the shower nozzles, squirts and sprays. This system reduced mill effluent by reducing fresh water required by 350 gpm or .5 mgd.

The unusual system of B-D Colloidair separators involves considerable piping and pumping with tanks and chambers of brick tile construction. A Fairbanks Morse trash pump and Hills-McCanna chemical pump are included. Tile work was by Kalamazoo Tank.

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A prominent firm, recognized as a leader in its field, and long active in all phases of domestic, export and import wood pulp, is increasing its selling staff because of expanding business. Unlimited opportunity will be afforded an exceptionally qualified man of proven accomplishment.

Communications will be treated in strictest confidence.

Our organization knows of this advertisement.

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Here's a new source for caustic soda

If your plant is in this area you can now have liquid caustic soda delivered more rapidly, more dependably, than ever before.

Here's what this new Hooker caustic soda plant at Montague, Mich., means to Midwest industry:

1. **Fast delivery.** You can have caustic soda delivered by tank car, loaded and dispatched within 24 hours of your call. In and near Chicago, tank car deliveries are made from Chicago stocks.
2. **Freight savings.** Depending on locality, you can save up to $2.84 per ton on freight. (To learn specific freight savings to your plant, just phone the Chicago office—CEntral 6-1311.)
3. **Dockside delivery.** On Lake Michigan and adjacent waterways you can have Hooker caustic delivered by barge—a new Hooker service (minimum 250 tons, dry basis). Savings are substantial.
4. **Prompt service you can count on.** At the Hooker sales office, 1 N. LaSalle St., Chicago, men are ready to help you plan efficient handling and storage, meet emergency needs, work out the most economical purchasing and delivery arrangements.
5. **Smoother, better processing.** You can use constant processing methods, and get consistent results with Hooker caustic soda. It's produced under careful control; more than 20 separate inspections and analyses protect its uniformity.

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Many industrial leaders in the Midwest are already enjoying the convenience, economy, and dependable supply of Hooker caustic shipped from Montague.

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Caustic soda for Midwest Industry comes from this new $12 million Hooker plant at Montague, Mich. The plant is built over a tremendous bed of pure salt, which supplies the caustic-producing cells.

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PULP & PAPER's 27th Review Number to Contain World Summaries—Pulp Map

The publishers of PULP & PAPER have announced plans for the publication's 27th Annual Review Number which will be issued in July of this year. The WORLD REVIEW NUMBER will carry statistical and reference data from 40 nations around the world, to form a truly global picture of the pulp and paper industry. Past issues have had world-wide distribution and year-round use.

Pattern for the 1954 WORLD REVIEW NUMBER will follow closely the established format for the publication as determined by the experience of the past 27 years. The issue will contain between 50 and 100 pages of pertinent domestic and foreign information on the industry —including complete statistical tables; maps and charts; and country - by - country round - the - world surveys.

Highlights of the 1954 issue of *PULP & PAPER'S* World Review Number

- **World-wide pulp and paper industry summary**

  . . . brief; but containing all pertinent facts on developments and trends during 1953.

- **Complete world pulp story**

  . . . including: World Pulp Map, showing flow of market pulp during 1953; World Pulp Review, showing trends and predicting what's ahead; Story of Non-Paper Pulps, covering textile and plastics uses.

- **Domestic Summary**

  . . . a review of the year in the United States and including complete statistical tables on the pulp and paper industry, woodpulp and pulpwood.

- **Canadian Section**

  . . . a review of activities of our North American neighbor in manufacture of its most important commodity—pulp.

- **Foreign Summaries**

  . . . the story of pulp and paper production and consumption in each of the important producing and consuming countries of the world.

- **Statistical Review**

  . . . this contains statistical tables covering every form of activity in pulp and paper production.

World Pulp Trade

One of the important features of the 1954 WORLD REVIEW NUMBER will be a further development of a feature introduced in the 1953 issue on World Pulp Trade. This section of the book will review the importance of woodpulp as a commodity in world trade—and show how it ranks both in volume and dollar value as one of the leaders in commodity exchange.

This section will deal with the growing self-sufficiency of North America in pulp, and show how even U.S. pulps are now reaching out to compete with foreign markets. It will describe the current temperature of the industry—world-wide—and by a straight reporting of production facts give some indication of the future of the industry.

Major feature of the World Pulp Trade section will be a two-page map of the world showing the flow of market pulp in the year 1953 from the producing areas to the consuming markets. The map will be similar to that contained in the World Review Number last year, but with the statistics brought up to date.

Market Pulp Directory

A second feature of this section will be a revision of the World Market Woodpulp Directory of producers, importers and agents. This Directory was published for the first time in 1953 with the cooperation of the Association of Pulp Consumers. This 8-page Directory contains a listing of world producers of market woodpulp, country-by-country, showing company name and address, the agent, and the type of pulp and brand name. A second section of the Directory lists importers and agents for market woodpulp in the United States.

There are almost 200 separate listings in this World Market Woodpulp Directory.

One of the traditional features of the WORLD REVIEW NUMBER has become the detailed examination of non-paper cellulose production and uses prepared especially for PULP & PAPER by Rex Vincent, technical director, Bulkley, Dunton Pulp Co. This feature covers world production of purified cellulose, describes markets, projected new capacity, and probable trends. Many of the projections by Mr. Vincent are exclusive to this publication.

U. S. and Canadian Summaries

The Domestic and Canadian sections of the WORLD REVIEW NUMBER provide the most complete assembly of useful information on the pulp and paper industry probably ever attempted. The U.S. Section, for example, contains the following, among other, information:

1. A table showing how the states rank in sales, taxes, wages, capital investment and number of workers.
2. A table showing ranking of states in wood and paper production.
3. A chart showing pulpwood consumption in the United States for the past 75 years.
4. A table showing companies producing newsprint in the

United States in 1926 as compared with the present day.

Complete and similar information is supplied on the industry in Canada.

Foreign Sections

One of the popular and exclusive features in the WORLD REVIEW NUMBER which has developed over the years and which will be extended in the 1954 issue, is the 40-nation round-up of pulp and paper activity. This foreign section contains statistical tables of production and use for each country, and contains, also for each country, a review of significant activity taking place during the past year.

For example, building of new capacity is described, as well as industry modernization, so that in order to get the current status of the industry in any country, it is only necessary to turn to the WORLD REVIEW NUMBER page listed in the index for that country.

The 1953 edition of WRN contained exclusive material on many foreign countries, including Russia, Japan, Formosa, Austria, Italy, etc. and the plans call for the same quality of coverage for 1954.

Statistical Tables

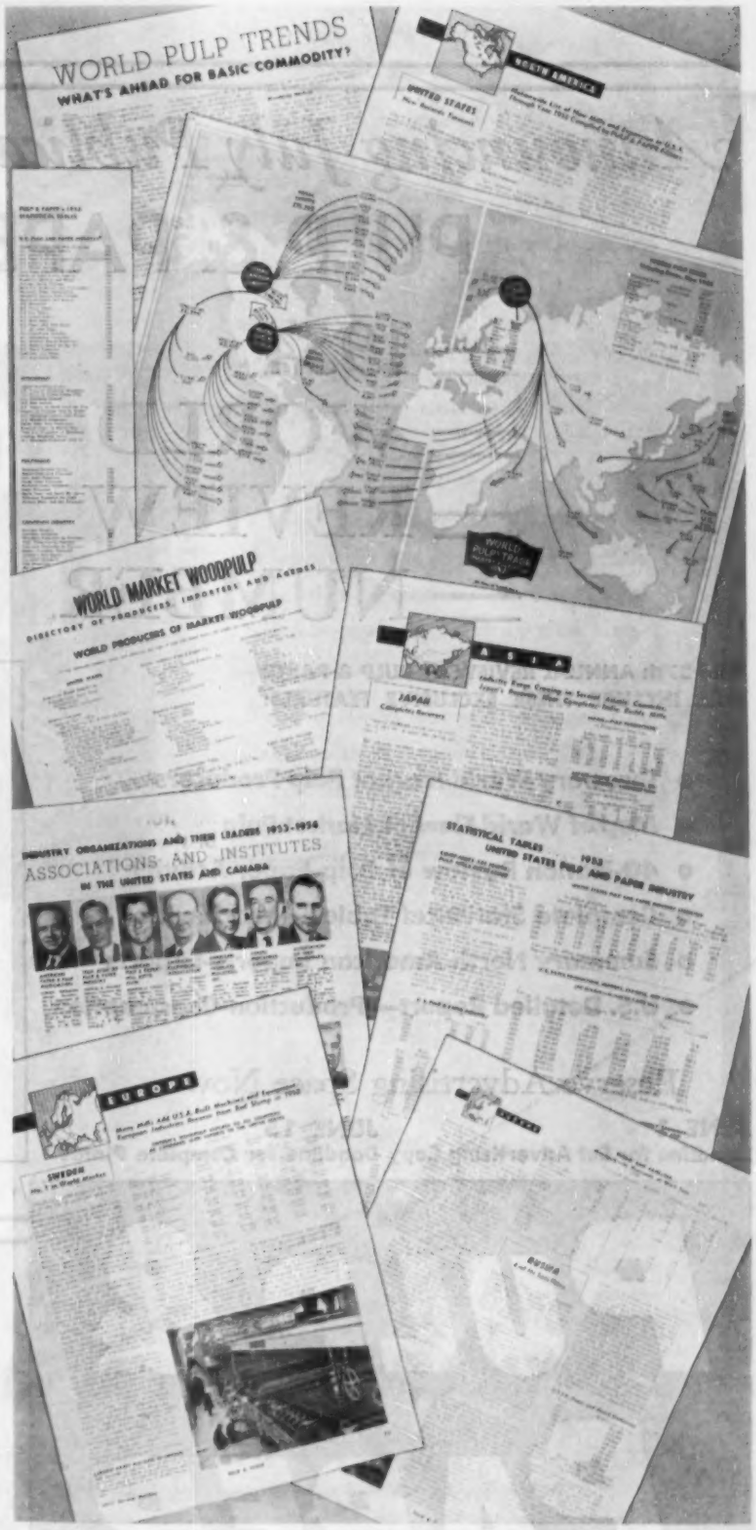
Some of the statistical tables carried in the WORLD REVIEW NUMBER had their genesis 27 years ago in the original "Review." These have been kept up to date, and new tables have been developed and added to them as data became necessary and available. PULP & PAPER has drawn on every possible statistical source to obtain accuracy and completeness for its statistical information.

The index to the 1953 statistical tables which is reproduced on this page gives an idea of the content to be expected in 1954.

Miscellaneous Features

PULP & PAPER has for many years carried a useful listing in its WORLD REVIEW NUMBER of associations and institutes in the United States and Canada serving the pulp and paper industry. This listing gives the name and address of the organization; its elected head, and its paid secretary. In other words, it provides needed industry information in an easy-to-find form.

Copies of the 1954 edition are expected to be in the mails late in July. Paid subscribers receive it as part of their subscription price to PULP & PAPER. Single copies for non-subscribers will be available at $2.00 per copy.



TYPICAL PAGES FROM PULP & PAPER'S 1953 WORLD REVIEW NUMBER

THESE REPRESENTATIVE PAGES from last year's World Review Number give an indication of the scope of material presented, in simple, easy-to-refer-to form for year-round use. The 1954 issue will contain similar material, graphically and clearly presented.

PULP & PAPER

Announcing July Publication

PULP & PAPER's

= 1954
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= REVIEW
= NUMBER

THIS 27th ANNUAL REVIEW BY PULP & PAPER WILL INCLUDE THESE EXCLUSIVE FEATURES:

- **Directory World Market Pulp Producers**
- **Map of World Flow of Market Pulp**
- **40-Nation Review of Pulp-Paper Activity**
- **Complete Statistical Tables—Worldwide**
- **Summary North American Imports-Exports**
- **U.S. Detailed Report—Production-Consumption**

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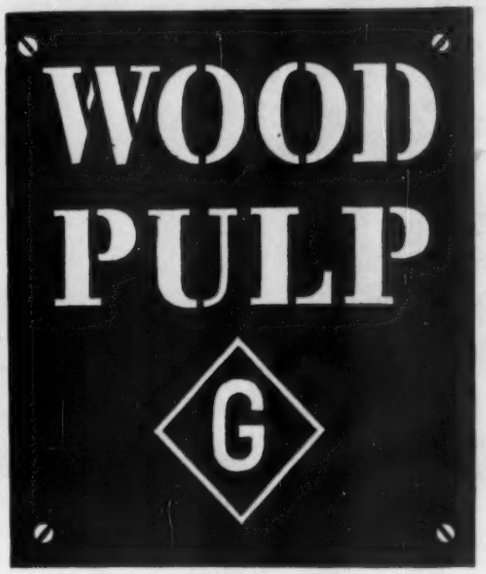

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until the message is delivered."
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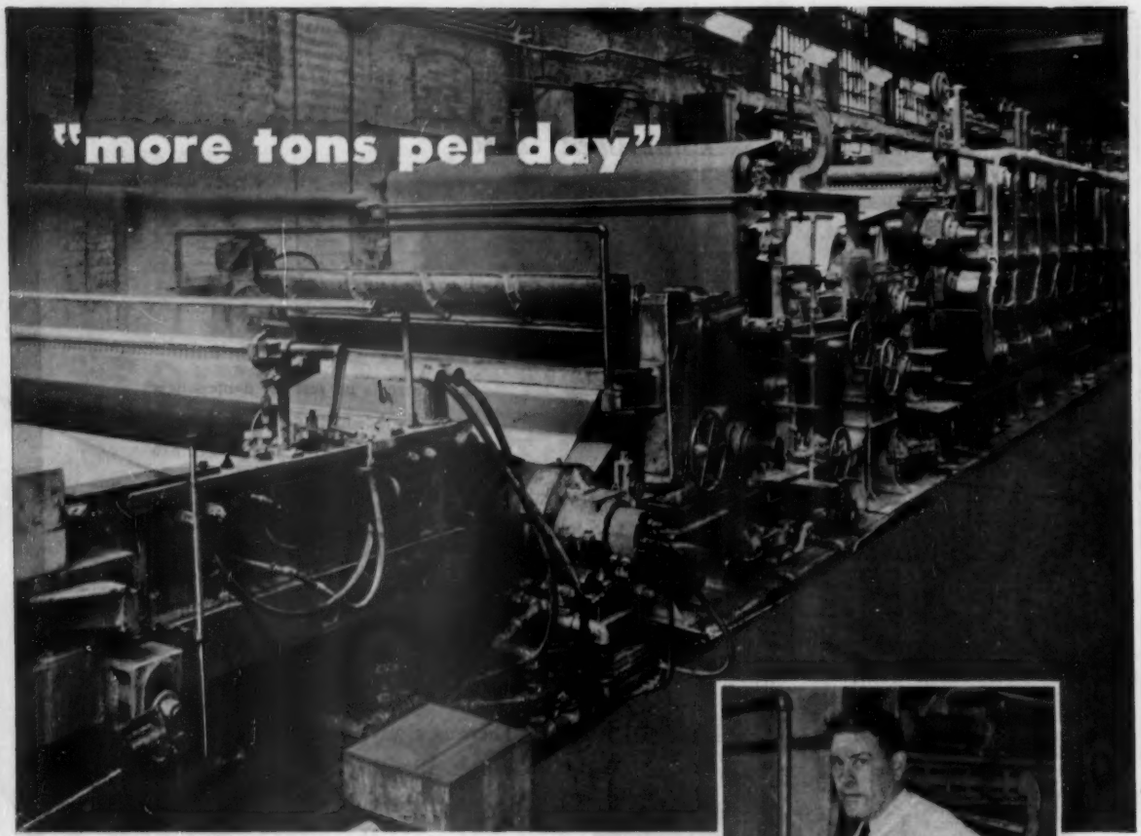

BYRON WESTON COMPANY, Dalton, Massachusetts, is famous for rag content ledgers and bonds, index bristols and specialties. Because finish is most important to them, they use a majority of Albany Felts on their 86 and 112 inch Fourdriniers Fritz Klein (right) Mill Manager, reports "more tons per day" with Albany Felts.

Albany Felt Company's technically trained sales engineers constantly strive to improve felt performance on your machines. Just as twenty-five years ago Albany engineers introduced the revolutionary concept of individually designed, custom-made felts for each felt position, today they are supplementing this valuable service with actual operational studies which we term "felt performance check." This extra service, by analyzing the basic principles of felt operation in relationship to over-all efficiency assures our customers MORE TONS PER DAY. Even more important, Albany sales engineers are backed up by the industry's leading service engineers and felt makers, a complete service laboratory, an extensive research and development program, and a product *famous* for quality.

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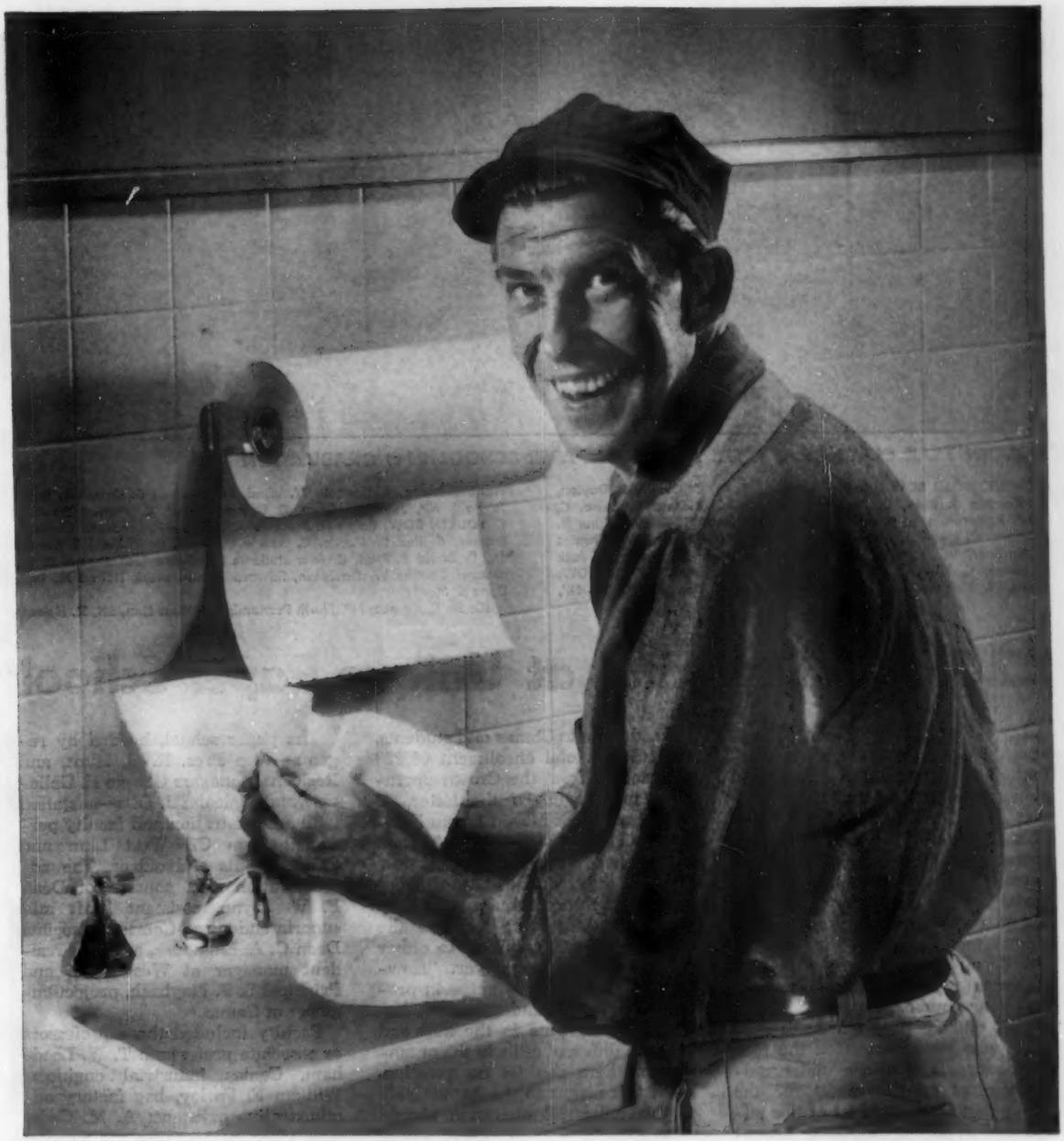
Other plants: Hoosick Falls, N. Y., North Monmouth, Maine, Cowansville, Quebec



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PPS4-3

FOURTH YEAR CLASS GRADUATES AT CAMAS PAPER SCHOOL 21st GRADUATION

FIRST (BOTTOM) ROW (l to r): Therone I. Faris, C, Gerwin P. Dayton, C, Morgan J. Rees, C, Reuben V. Brown, C, Richard G. Lowe, C, O. P. Aggarwala, C, Russell E. Lawton, WL. SECOND ROW: Wilbur H. Niehaus, C, Lloyd D. Johnson, WL, Edmund H. Wagner, WL, Charles E. Gardner, WL, Charles Luchterhand, WL, Elwyn W. Stroup, C, Jack R. Sease, C, Kenneth Bethune, C, Ross L. O'Brien, NP. THIRD ROW: Hollis W. Fleischman, C, George Schmelzer, C, Daniel C. Leary, NP, Frank Whitney, C, Kenneth W. Wind, PO, William D. Carr, WL, Ralph A. Bold, NP, James McCourt, C, George Schiesl, C, Warren Wendell, C. FOURTH ROW: Ralph H. Brothers, C, William P. Broch, C, James B. Palmer, C, Rex R. Morris, C, Archie I. Otnes, C, William E. Ginder Jr., C, David S. Platt, C. Four students from West Linn are not in the picture: Charles W. Davidson, Edward S. Karbonski, Hubert M. Lyle, Donald Moritz.

(Code: C, Camas; NP, North Portland; WL, West Linn, SH, St. Helens)

220 Earn Diplomas at Unique Paper School

CROWN ZELLERBACH Paper School, which has attracted world-wide attention in industrial education circles, held its 21st annual graduation Mar. 18-19 at Camas, Wash. This unique four-year, college-accredited school headed and conducted by Crown executive, managerial and supervisory personnel has to date bestowed graduate diplomas on 364 students who completed all four years and 3200 diplomas to those completing the first-year course.

The official program said: "To those who have completed the four year course and to the undergraduates must go the credit for the major part of the success of this adventure in adult industrial education. The interest and enthusiasm of these men and women, and those who during the past 21 years have completed in part or in whole the studies, have made it a worthwhile undertaking."

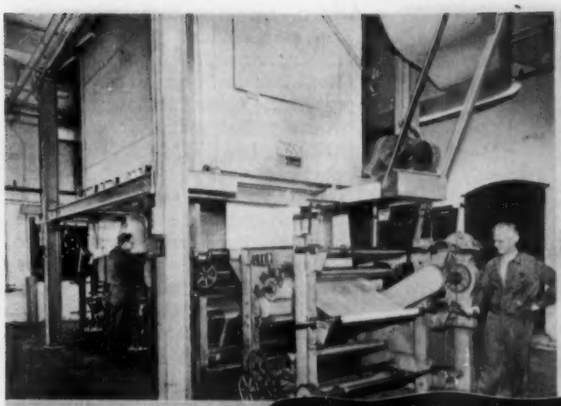
In addition to Camas mill students, the 1953-54 total enrollment of 220 included 92 from the Crown operations in Oregon. Of the latter, 46 were from West Linn, 12 from Portland and North Portland and 33 from St. Helens.

As to the value of the paper school, the organization feels it would be difficult to measure the monetary worth resulting to either the employe or employer. "However," it states, "as to value in promoting a better understanding between departments in the mill and between different mills in the organization, there can be no question. What this means to the human side of this industrial operation should be as evident as the forest of young trees which will some day supply the raw material to provide the wood to make the chips to make the pulp to make the paper, which will provide the job with which we in the organization make our livelihood."

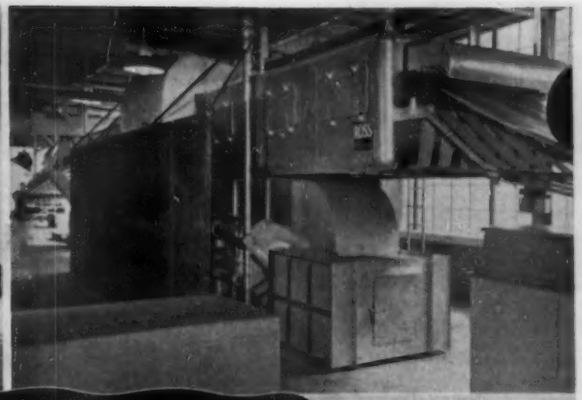
The paper school, headed by regents—Vice Pres. R. O. Hunt, and Resident Managers George H. Gallaway and Malcolm J. Otis—is staffed with administration and faculty personnel from CZ West Linn and Camas plants and offices. The administration staff consists of Dean F. W. Flynn, assistant kraft mill superintendent at Camas; Associate Dean C. A. Enghouse, assistant resident manager at West Linn, and Principal L. F. Maybach, project engineer at Camas.

Faculty included these professors or associate professors: T. W. Leedham, Camas industrial engineer; William F. Farley, bag factory administrative assistant; A. M. Cady, supervisor maintenance and riggers; H. C. Hall, pulping schedule coordinator; R. B. Haight, training supervisor; L. R. Greger, assistant supervisor electrical maintenance; G. D. Bailey, process engineer; L. R. Giersch, paper technician; D. P.

PRESIDING at 21st graduation ceremonies were (l to r): E. P. STAMM, CZ Vice Pres.; Regent GEORGE H. GALLAWAY, Res. Mgr. of Camas Div.; EDGAR W. SMITH, Oregon State Board of Higher Education; Dean F. W. FLYNN, Asst. Kraft Mill Supt., presiding as toastmaster; Regent MALCOLM J. OTIS, Res. Mgr. of West Linn Div.; Principal L. F. MAYBACH, Proj. Engr.; A. S. HAMMOND, Mgr. of CZ Gummed & Coated Prods. Div.



Tower Type Dryer handling Fibreglas cloth coated with silicones.



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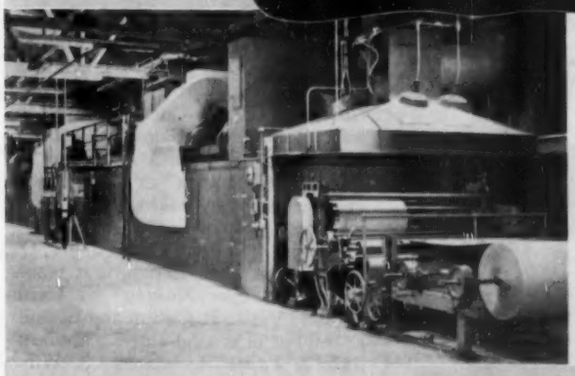
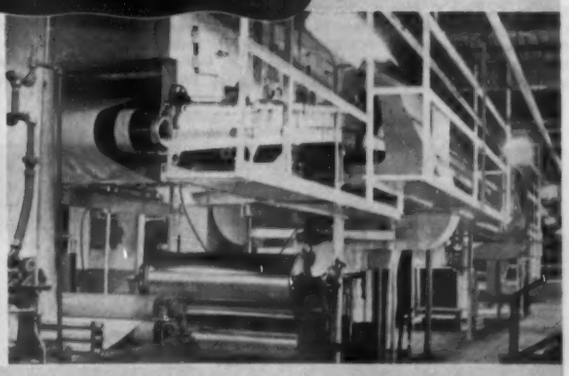
Exterior view of Tower Treater for handling solvent coated paper.

Huge multi-pass dryer used in processing sensitized paper.



Treater Drying Unit with 2 heating zones and cooling section.



Drying and Fusing Unit for organosols and plastisols.

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PART OF SECOND YEAR CLASS

FIRST ROW (l to r): John W. Hopp, WL, LeRoy Saulsbury, WL, Robert Bailey, WL, John E. Frederick, WL, Kenneth M. Mortimer, C, Harold H. Dressel, C, W. E. Parkinson, C. SECOND ROW: John Date, C, Charles E. Blacketer, C, William T. Jessett, C, Robert Lawson, PO, Alan D. Kircher, C, Kent V. Ellis, C, Elbert Lewis, C, Don Conners, C. THIRD ROW: Aristides S. Phoutrides, C, Neil Johnson, NP, William Locke, PO, Gene Yarnell, C, Jim Nichols, C, Richard Cleaver, C, Demetrius Verkados, C. FOURTH ROW: E. E. Jacobs, C, P. A. Newman, C, A. L. Chasse, C. Missing from pictures: Wilbert Kalmbach, C, Rueben A. Marti, C, John A. Miller, C, Robert P. Mills, C, Bernard L. Smith, C, Daniel S. Beasley, WL, Frank W. Lawrence, WL.

PART OF SECOND YEAR CLASS

FIRST ROW (l to r): Albert C. Powers, C, Hans A. Borresen, C, Jack W. Schatz, C, Ada Goiburn, C, Owen Street, WL, Paul M. Henry Jr., WL, Richard L. McGhee, WL. SECOND ROW: Fredrick D. MacArthur, C, Edward W. Craven, C, Roy A. Pearson, C, Wilbur F. Bellinger, C, Roland Sundstrom, C, Verlin R. Cotton, WL, Darrell Thomas, WL. THIRD ROW: L. E. Bobbitt, C, Don R. Couture, C, Fred Comets, C, R. G. Carter, C, A. Piche, C, R. A. Watt, C, G. A. Murdock, C, W. D. Herr, C. FOURTH ROW: Rile E. Postal, C, Jerome R. Jendro, C, Jerome L. Kledrowski, C, Larry Honeycutt, C, Thomas C. Paisley, C, Melvin J. Wilson, C, Robert C. Hitchcock, C.

(Code: C, Camas; NP, North Portland; WL, West Linn; SH, St. Helens)

Ashton, assistant technical supervisor, and William F. Cyrus, technical department.

Registrar is Leona Blair, supervisor of the Camas stenographic department; and administrative assistant is J. L. Edwards, technical department.

Graduations on successive nights —one for first and second year, the other for third and fourth year classes—were held because of the large number of participants. Dean Clifford E. Maser, school of business and technology, Oregon State College, addressed the first and Edgar W. Smith, member of Oregon State Board of higher education, was speaker for the senior group.

Dean Flynn, toastmaster of the second session, pointed out that the school functions on a voluntary basis, some students and faculty giving much time and traveling many miles each school year to attend meetings and classes. Prof. Leedham presided at the first session.

Diplomas and honor awards were presented to first and second year students by George Gallaway, manager at Camas, and to third and fourth year classes by Malcolm Otis.

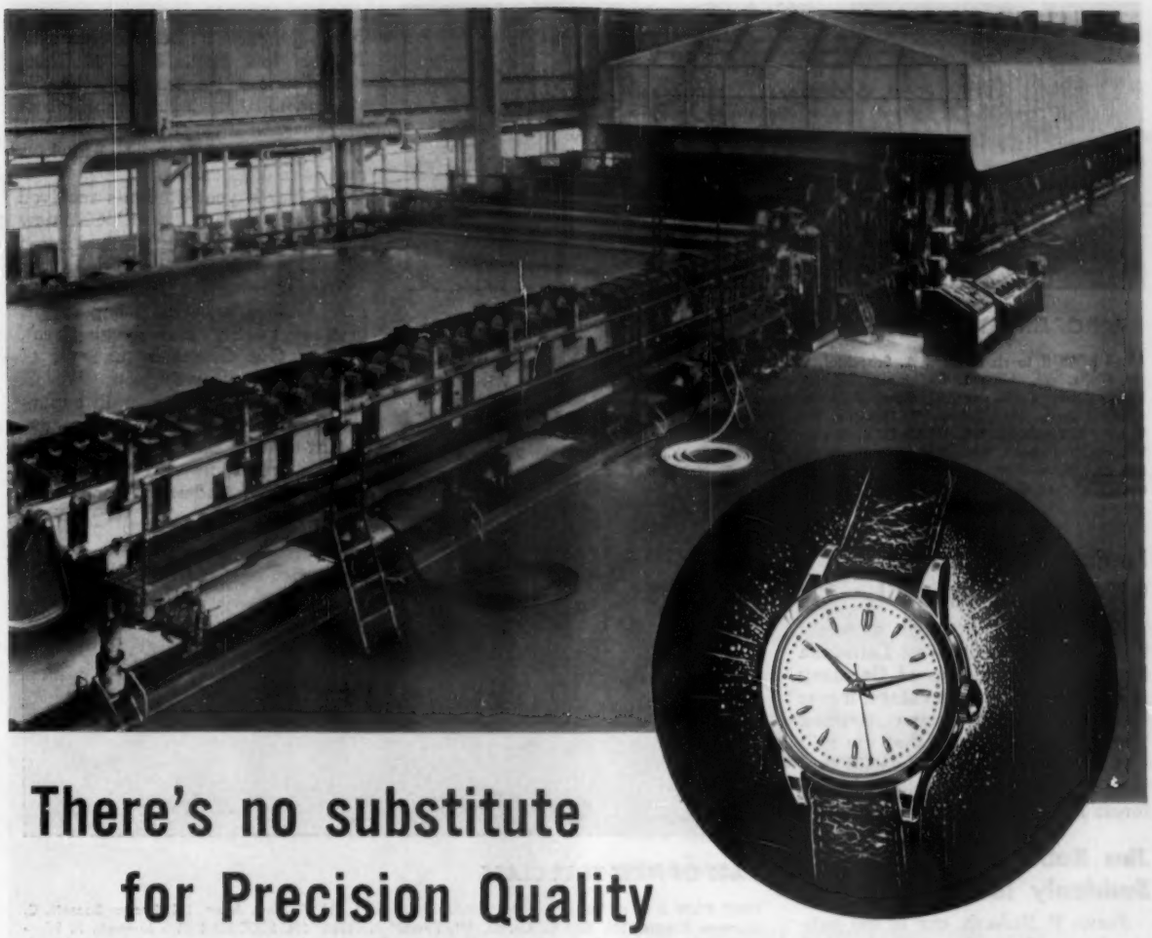
Top honors for fourth year class, consisting of a week's trip to pulp and paper mills of the Pacific Northwest, went to Daniel C. Leary, Western Waxed Paper Co., North Portland: James E. McCourt and Rex R. Morris, Camas; Edward S. Karbonski and William P. Carr, West Linn.

Third year awards: First place winners, Carl Arvidson and Forrest D. Martin, received Vols. 1, 2 and 3 of *"Pulp & Paper Manufacture."* Charles J. Bloch, Curtis E. Hughey and Robert M. Samuels, second place winners, Vol. 1 of *"Pulp & Paper Manufacture"* or *"Chemistry of Pulp & Paper Making"* by Sutermeister.

Second year awards: Albert C. Powers and Paul Henry, first place winners, *"Paper Making"* by Dard Hunter; Verlin R. Cotton and Lowell E. Bobbitt in second places, *"Modern Pulp & Paper"* by George S. Witham, Sr.

First year awards: Evelyn Bassett, Roger E. Stoy and Delmar D. Henricks, first places, *"Paper Making"* by Dard Hunter; Jan Bais, Allen K. Haller and Roy C. Carter, second *"Modern Pulp & Paper"* by George S. Witham, Sr.,

Two-year subscriptions to PULP & PAPER were awarded honorable mention winners of all classes: Fourth year—James B. Palmer, Jr., William Broch and Donald W. Moritz; third —Paul A. Larson, Leonard Bartel;



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The tolerance standards set for manufacture of Bagley & Sewall designed paper making machinery are no less than the requirements necessary in fine watch making.

We think the best evidence of the fact that there's no substitute for precision manufacture is in Bagley & Sewall machinery still maintaining production at the designed speeds and efficiency, after years of constant operation.

Bagley & Sewall is setting the pace for designs and productions of the wide and high speed paper machines for today's paper industry needs. A tribute to the precision craftsmanship that went into their manufacture, these modern machines respond fast and accurately with watch-like smoothness to operating controls.

Yours for the asking — and our engineering staff welcomes the opportunity — to apply Bagley & Sewall newest designs in a plan to meet your requirements in paper making machinery — machinery always built with precision quality.

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second—Hans Borressen, Porter A. Newman, Jack W. Schatz, James W. Nichols and Richard L. McGhee; first—Rupert P. Laidig, John W. Anderson, Richard Holcomb, Robert W. Bright, Edward A. Schechtel, Eldon D. Hanks, Ivon L. Hawkins and John J. Rods.

All fourth year students received a copy of "*Making Paper*," CZ's new textbook, and a year's subscription to Pulp & Paper.

The following are faculty advisors: P. V. Millard, assistant to supervisor, product quality and development, Camas; Gus Ostenson, manager of Camas paper production; W. C. Jacoby, assistant sulfite mill superintendent at Camas; E. H. Nunn, assistant to West Linn manager; W. M. Hearon, assistant director of research; C. A. Anderson, wood technologist at Camas.

Louisiana Timber Offered German Mill

A paper mill that might or might not be built in southwest Louisiana by Waldhof Industries of Germany is still in the discussion stage, it was learned from Louisiana sources. There is no assurance that the mill will be built, but it can be said that Waldhof has full cooperation of large forest land owners.

Jim Rubush Dies Suddenly in Far West

James P. Rubush, one of the outstanding pulp and paper chemical engineers and designer and creator of new equipment and processes, died suddenly in his sleep in a Portland, Ore., hotel early Mar. 26. He was 48. His home was in Wenatchee, Wash., where he also owned and operated three fruit ranches.

For several years he has represented Improved Paper Machinery Corp. in the Far West and he was head of the Rubush Evaporator Co., designing evaporators for pulp mills.

He is survived by his widow, the former Virginia M. McCutchan of Longview, Wash., and two daughters.

Dave Harris and Meder Johnson, officers of the Seattle unit of the Brotherhood of Migratory Peddlers, industry group to which Mr. Rubush belonged, were honorary pallbearers.

Mr. Rubush was born in Franklin, Ind., worked in the eastern pulp and paper industry, and was engineer and representative for Swenson Evaporator, Goslin-Birmingham and John Inglis in Canada before moving to Wenatchee in 1947. Besides ranching as a side-line, he was especially talented as a painter, particularly in oils.

PART OF FIRST YEAR CLASS

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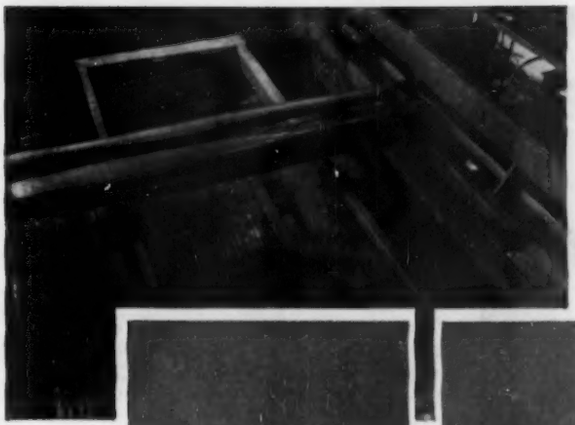
(Code: C, Camas; NP, North Portland; WL, West Linn; SH, St. Helens)



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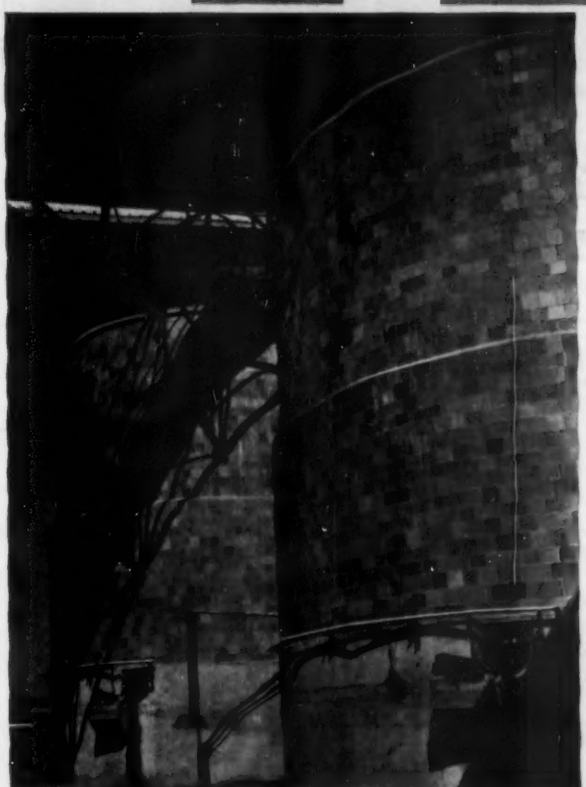

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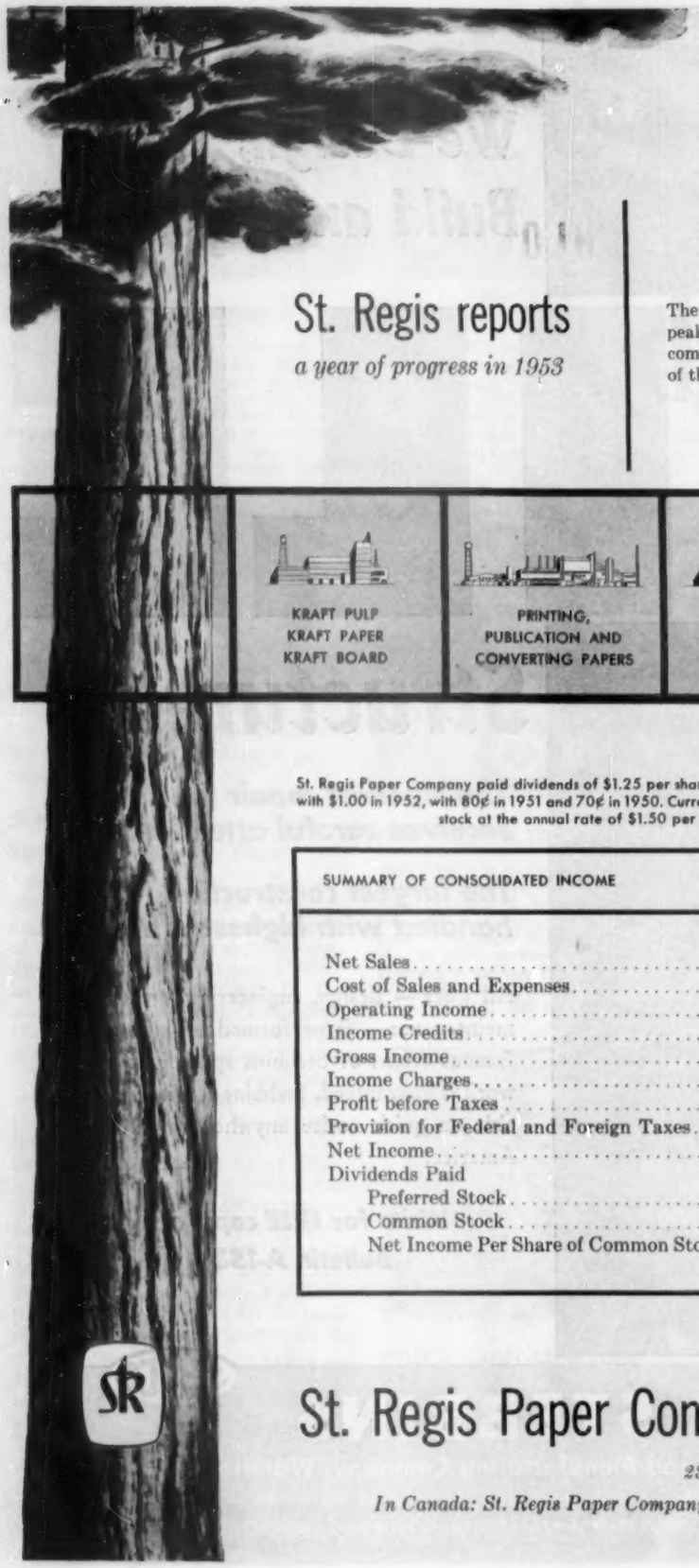

St. Regis reports

a year of progress in 1953

The annual report shows net sales at a new peak for the company at $200,334,208, compared with $182,712,239 in 1952. A copy of the report is available upon request.

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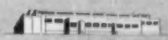
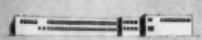


MULTIWALL BAGS



ST. REGIS PANELYTE

..AND NUMEROUS PAPER SPECIALTIES

St. Regis Paper Company paid dividends of $1.25 per share on the common stock in 1953, as compared with $1.00 in 1952, with 80¢ in 1951 and 70¢ in 1950. Currently dividends are being paid on the common stock at the annual rate of $1.50 per share.

SUMMARY OF CONSOLIDATED INCOME	For the years ended December 31, 1953 and 1952	
	1953	1952
Net Sales	$200,334,208	$182,712,239
Cost of Sales and Expenses	173,076,318	158,165,799
Operating Income	27,257,890	24,546,440
Income Credits	4,652,303	1,135,723
Gross Income	31,910,193	25,682,163
Income Charges	2,547,083	1,441,788
Profit before Taxes	29,363,110	24,240,375
Provision for Federal and Foreign Taxes	13 206,207	11,538,398
Net Income	16,156,903	12,701,977
Dividends Paid		
Preferred Stock	664,660	693,308
Common Stock	6,550,449	5,170,714
Net Income Per Share of Common Stock	2.91	2.32

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Chlorine Dioxide does not harm the pulp's physical or chemical properties, yet it has the power to destroy wood and bark specks and thereby give a cleaner end product. Because of this bleach's powerful, selective action, woods ordinarily considered unfit may be used to make quality pulp.

To help you put the process to work in your plant, Pennsalt offers both service and supplies. Experienced engineers will help you design a generator and initiate the process. Pennsalt's Portland, Oregon plant can supply you with commercial grade Sodium Chlorate, 99% guarantee, fine crystal size, in drums or tank cars.

Write for more information on this outstanding new bleaching process, or on Pennsalt's Big Three—Chlorine, Caustic Soda, Sodium Chlorate.

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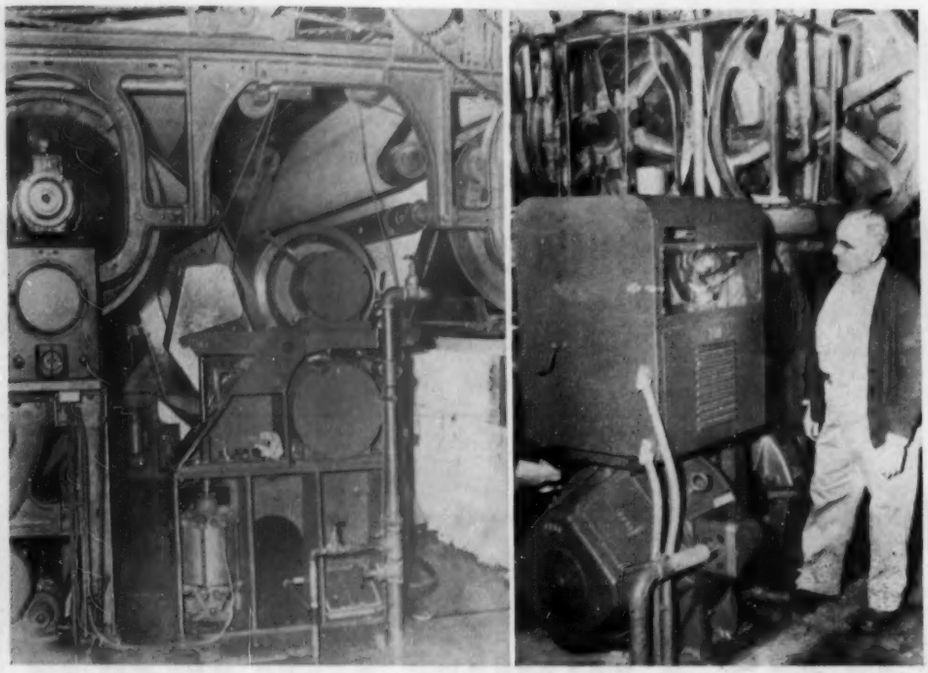


CONVERSION TO 2-SECTION UNIT

TUB SIZE (left view) installed between first and second dryer sections at Oregon Pulp & Paper Co. This pneumatic loaded unit has Foxboro controls and is powered by Reliance sectional drive.

MOTOR AND SECTION Interlock Regulators (right view) of Reliance after-section dryer drive, getting critical inspection of Boss Machinetender MIKE INNOCENTTI.

How Oregon Mill Converted to New Machine Drive

Photos by C. Gerald Richards, Chief Electrician, Oregon Pulp & Paper Co.

EARLY LAST YEAR the management of Oregon Pulp & Paper Co., Salem, Oregon, decided to add a tub size press to the plant's No. 1 machine and make other supplementary changes to increase quality and quantity of bond papers produced. At that time the machine drive consisted of a D-C 240 kw 220-volt generator jointly driven by a steam turbine and 350 hp synchronous motor.

The machine was separated, and tub size unit was installed between the two sections. Space limitations necessitated removal of the in-line winder which now is set to the side of its former location and the discharge end of the machine occupies the former winder area. Two steam dryers and four felt dryers were added to make a total of 22 first-section dryers and 11 dryers after the size press.

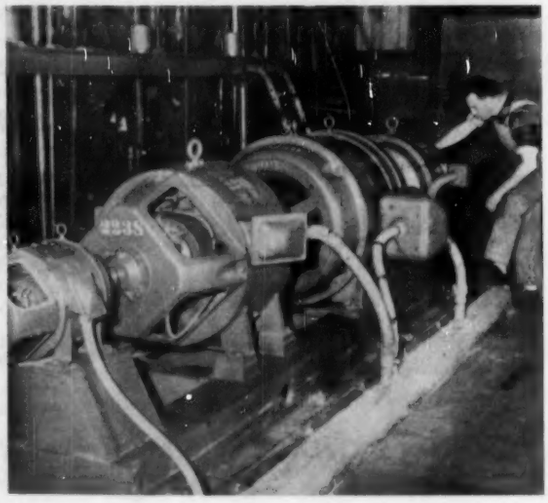
The drive formerly powering the entire machine now drives just the first section, the turbine exhaust steam utilized in the drying rolls as previously. When steam consumption in the dryers is low, the synchronous motor assists the turbine to drive the generator. If steam demand for drying runs high, as on heavy paper, the turbine more than carries the load. In that case the motor acts as an A-C generator and contributes energy to the line.

Studies made by engineers and plant management resulted in selecting a Reliance Electric Engineering Co. sectional electric paper machine drive for powering tub size and after-dryer units—first drive unit of this type with electronic regulators in the Pacific Coast industry.

This unit consists of a motor generator set, control panels and individual adjustable-speed drives, combines electronic controls with section interlock regulators to provide precision draw control for various speeds and different weights of paper. The tub-size drive and after-dryer drives take their references from an alternator connecting with drive end of first dryer section.

Each of two Reliance section drives has a 40 hp D-C motor connecting to the machine via Falk gear reducer. The generating unit providing power to these motors consists of 125 hp 2300-volt 1800 rpm motor, directly coupled to two 40 kw 230-volt D-C generator, and the 3 kw exciter.

SIR controls, one for each of the Reliance section drives, appropriately regulate speed of drive motors



4-UNIT MOTOR

RELIANCE 4-UNIT motor-generator set, supplying D-C power for both new section drives at Salem, Ore., gets once-over from JOHN WOLF, First Electrical Operator.

Griffith S.D.T. ROLLS

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"Self-Doctoring Topress" Rolls

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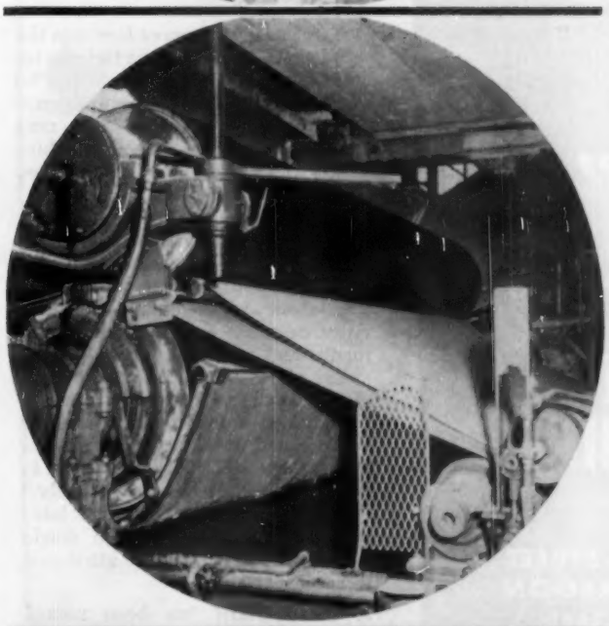

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Crown Zellerbach's No. 2 News Machine at Port Angeles, Washington, is equipped with a Beloit Pick-Up Transfer. In over 100 hours of continuous operation (since last start-up) no breaks occurred at this press. Machine speed is in excess of 1,700 feet per minute.

The top roll is resilient GRIFFITH S.D.T. Three other Self-Doctoring Topress Rolls are running in this three-machine mill. (All were purchased separately from GRIFFITH at Portland.)

GRIFFITH S. D. T. Rolls are also running on Kraft and Sulphite machines in many positions from Lumpcrusher to Sizing Presses.

Bottom Suction Rolls are rubber covered and drilled by GRIFFITH at Portland.

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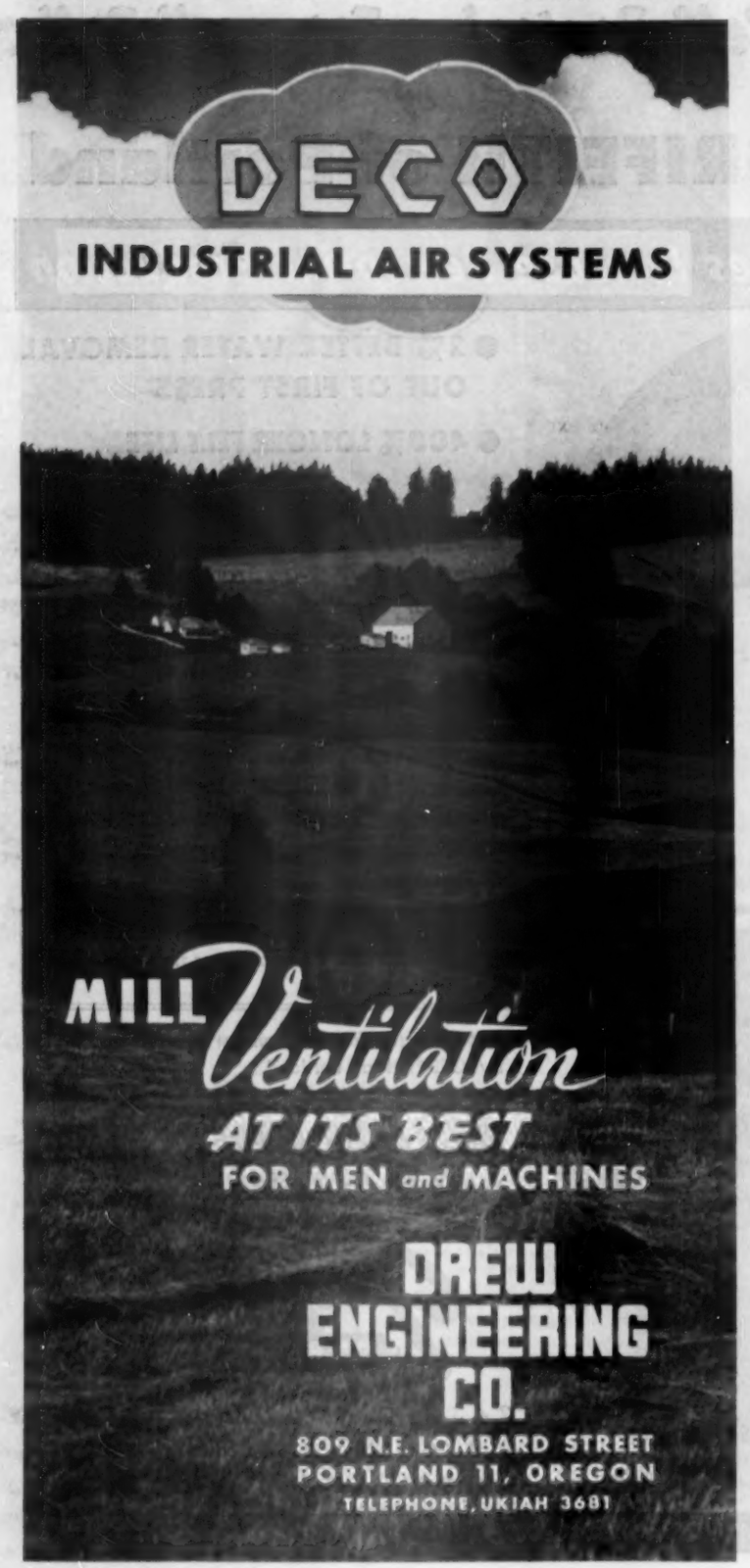

according to stimuli received via a reference generator and alternator.

C. G. Richards, plant chief electrician, says the unit's "electronic amplifier has many advantages over any amplifier noticed to date." This VSC panel, utilizing three gaseous grid-controlled rectifier tubes, has essential circuits of parallel construction. This permits the removal or damage of any two tubes without disturbing the drives' functions. The system is so effective that several tubes can be removed or undergo change of characteristics while the machine is operating, without affecting draw or production.

Mr. Richards states advantages show up in starting the machine in that it accelerates very slowly and smoothly from rest to operating speed.

KEY PERSONNEL concerned with the modernization project at Oregon Pulp & Paper Co. (l to r): LOU GOERKE, in charge of mechanical work; O. P. "RED" WEGNER, Plant Engineer; JOE WATSON, who designed instrumentation.

"This is the direct opposite of the common vacuum tube acceleration method," he said, "and is an advantage when slow starting is required. This is doubly true of the dryer section and probably would give longer life to gears."

Two speed references feed into the VSC panel—one from the tachometer and the other from the SIR. The tachometer provides the reference for smooth acceleration and machine speed. The SIR signal furnishes quick response to any speed error which may occur.

When it came to starting up the new installation, Richard Jamison, Reliance factory engineer, arrived a couple of hours before putting the first sheet on the whole machine. After he made a few minor adjustments and regulated draws to the speed of first dryer section by tachometer, the sheet went on in about 15 minutes. Subsequent to making additional draw adjustment the 12-pound bond reportedly "continued to roll through the machine perfectly."

Four "productive months" later there still had not been a single sheet break that could be attributed to speed variation.

J. R. BOYKIN has been named general manager of Stone Container Corp.'s mill at Mobile, Ala.

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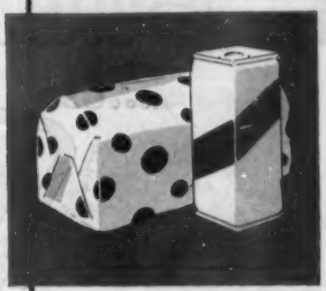

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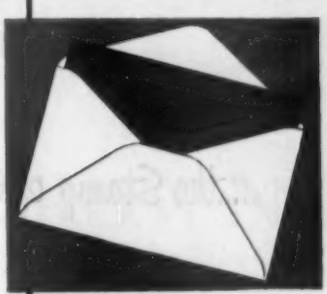

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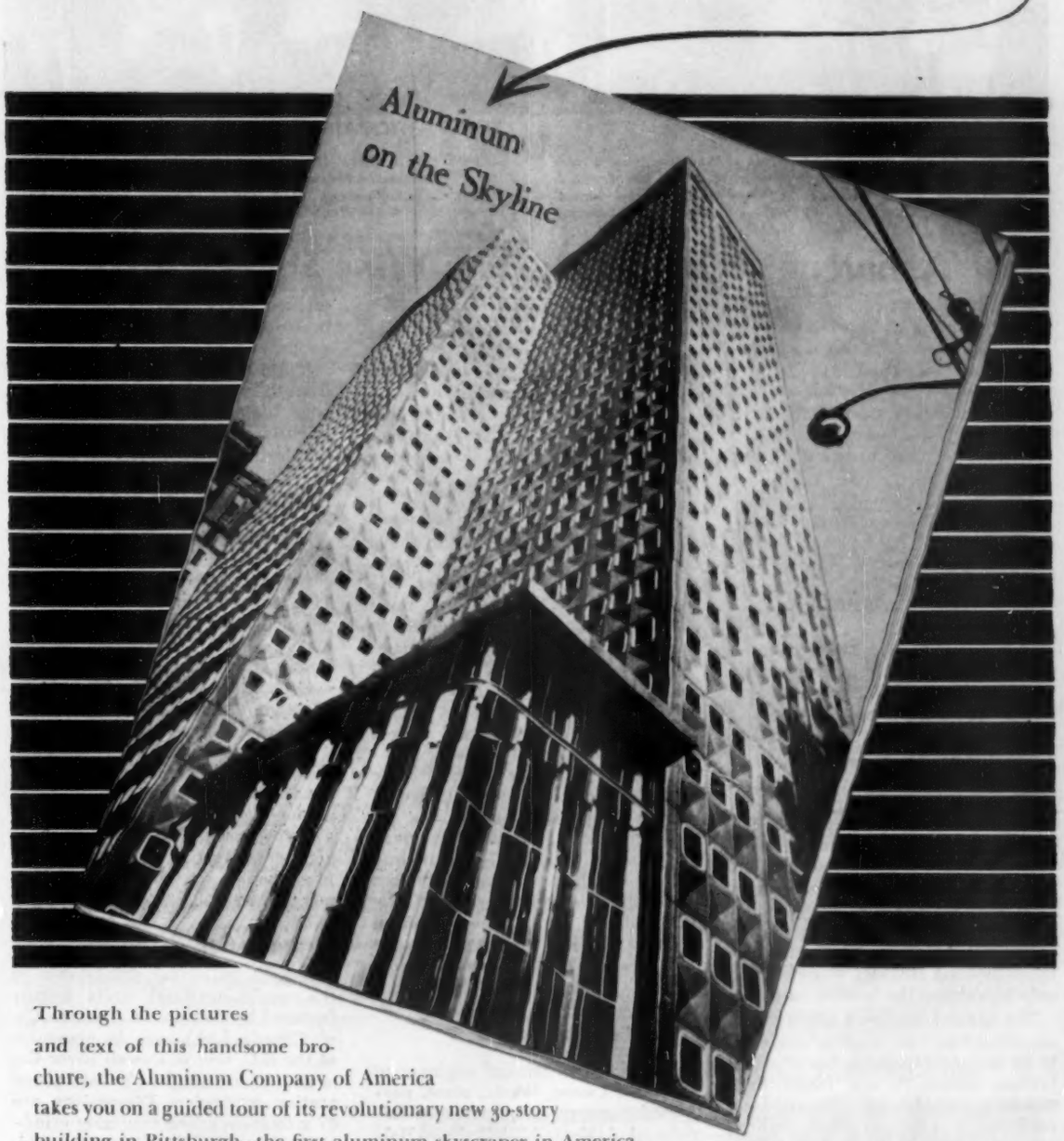

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THEY STAGED SHIBLEY CONTEST

IN CHARGE OF competition held first time in West Linn, Ore. (l to r): Moderator GLEN KING, Technical Supervisor, West Linn mill, Crown Z; H. B. PETERSEN, Hercules Powder Co., Secy-Treas. of Tappi Section; FRED J. WELEBER, Chief Chemist, Publishers' Paper, Section Chairman.

THEY PARTICIPATED IN CONTEST

SHIBLEY CONTESTANTS (l to r): D. L. MOSHER, Fibreboard Products, Inc., Port Angeles; 1954 winner FRANK DINGER, Puget Sound Pulp & Timber Co., Bellingham; MAX CUSTIS, Crown Zellerbach Corp., Camas; J. F. FARRINGTON, Scott Paper Co., Everett.

New Technique With Lab Beaters Wins Shibley Prize

TO FRANK DINGER, project engineer of Puget Sound Pulp & Timber Co., Bellingham, Wash., went top honors as winner of the 1954 Shibley award competition Mar. 19 at West Linn, Ore. This contest, inaugurated in 1939, is sponsored by Coast Tappi for young mill technicians and operators.

Mr. Dinger's paper, "Laboratory Beater Calibration—Unique 80-Grit Touch-Up Method," concerned a new technique for maintaining calibration of the Valley laboratory beaters. Investigations for this project were initiated in an effort to find a reproducible rapid method of maintaining calibrations which would overcome difficulties experienced with existing published methods.

Studies of variables common to all methods disclosed that (1) bar surface roughness has no effect on strength development, (2) roll-bar leading edge must be shaped with sufficient relief to result in minimum fiber cutting, (3) turbulence flow should be minimized by properly placed bedplate and correctly shaped lead grout, (4) contact pressure between beating surfaces was effective only in varying the beating rate.

The project disclosed slight pitch accumulations on beating surfaces to be an uncontrollable beater calibration factor. It was found that grinding with 80-grit carborundum produced a sufficiently dull leading edge of beater bars to give desired strength development. These two observations prompted the development of the 80-grit touch-up method which gives "reproducible and dependable results with a minimum of maintenance required for uniform beater calibration."

Contestants were honor guests at a dinner where Dr. Joseph McCarthy, University of Washington, announced the winner and presented the awards at that time.

David L. Mosher, project chemist of Fibreboard Products, Inc., Port Angeles, Wash., presented a paper during the contest on variables affecting brightness of unbleached sulfite.

From the study he concludes that percentage of reducible sulfur, percentage of sulfur trioxide, and percentage of lignin found to be present in the unbleached sulfite are linked together and controlled by temperature; and that presence of the above in unbleached sulfite, beyond limits, is detrimental to brightness. He pointed out that free sulfur must be kept below 0.01% in order to realize 58.0 or better brightness; formation of sulfur trioxide must be kept within limits, and cooking liquor composition must be maintained at a high percentage of free SO_2 with a sufficient excess of combined SO_2 present to neutralize the strong lignosulfonic acids given off during the cooking cycle.

Furthermore, ample time must be allowed for complete penetration of the chips in a digester before the critical temperature (110°C) is attained. He said "a slow uniform cooking temperature proved to be our answer to bright unbleached sulfite."

Other Papers

Max Custis, chemical engineer at Crown Z Camas, Wash., plant, presented a paper, "Methods and Results of A Kraft Mill Sodium Balance," revealing that investigations at this mill disclosed high sodium losses result chiefly from operating equipment above design capacity. It was found that close attention to operation details could alleviate this condition.

James F. Farrington, project engineer at Scott Paper Co., Everett, Wash., presented "Possible Improvements in the Routine Analysis of Ordnance Pulp."

In the use of conventional analytical methods for routine testing of alpha-, beta- and gamma-cellulose in ordnance pulp, according to this paper, the agreement between results on duplicate samples was sufficiently variable to necessitate repeat determinations rather frequently. This situation increased the testing time required and restricted the degree to which these values could be used for the control of pulp quality.

Therefore, a study for possible improvements in the routine analysis of ordnance pulp was initiated. This study included many of the physical and chemical variables which might influence the results. Particular emphasis was placed on various filtering media for a more effective separation of the alpha- and beta-cellulose fractions.

The results of this investigation show that reproducible and accurate results may be obtained by using a modified procedure which the paper described. The modifications appear interesting as possible improvements on the conventional method for routine control testing.

Biggest Grindstones

Biggest pulpwood grindstones in the world—artificial units manufactured by Norton Co. (Norton Co. of Canada Ltd.)—are in operation at the B.C. mill of Powell River Co. as part of the company's wood preparation expansion. Dimensions are 67 x 69 inches. The magazine grinders built by Koehring-Waterous, Ltd. also are the world's largest. They cost about $1,240,000.

Charmin Yeast Plant

Structural steel is up for Charmin Paper Mills' new torula yeast plant, utilizing all of the collected liquor from Charmin's sulfite pulping operations, at Green Bay, Wis.

The $2,500,000 yeast factory will be the largest in the Western Hemisphere. Some equipment too large for doors has been set in place.

SWIFT'S *New Process* GLUE

FOR HIGH RETENTION OF TITANIUM DIOXIDE AND CLAY

• This is New Process glue . . . greatly magnified . . . as it leaves the drier before being ground and screened to uniform particle size. Its unusual crystalline honeycomb structure quickly absorbs water and promotes unusually high retention of fiber and filler on the wire. Brightness and opacity are improved because of its ability to retain greater amounts of titanium dioxide and clay in the sheet.

Because it is produced by an entirely new process, this *colloidally active* water soluble animal protein is light in color and free of contaminating substances. Its exceptional flocculating ability helps produce a denser, smoother and more uniform sheet—and aids in the production of denser, brighter pigmentation of colored stocks.

Its performance is economical too . . . it is used at low concentrations . . . its high retention of valuable pigments in the sheet usually more than offsets the cost of the glue.

Find out more about Swift's *New Process* Glue for titanium dioxide and clay retention. If you use a flotation type saveall, this colloidally active protein can secure and maintain high recovery in your system. An informative bulletin, outlining formulas, equipment and instructions for these uses is available to you without obligation.

Write for details and remember . . .

DON'T OVERLOOK THESE OTHER IMPORTANT USES FOR NEW PROCESS GLUE

- For creping of facial and toilet tissues and paper napkins
- For use in flotation type saveall systems
- For machine coating

ONE TRIAL IS BETTER THAN A THOUSAND CLAIMS

Call Swift for GLUES

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USE THIS COUPON FOR FURTHER INFORMATION

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Chicago 9, Illinois

Please send your latest bulletin on Swift's New Process Glue.

Name of Company.....

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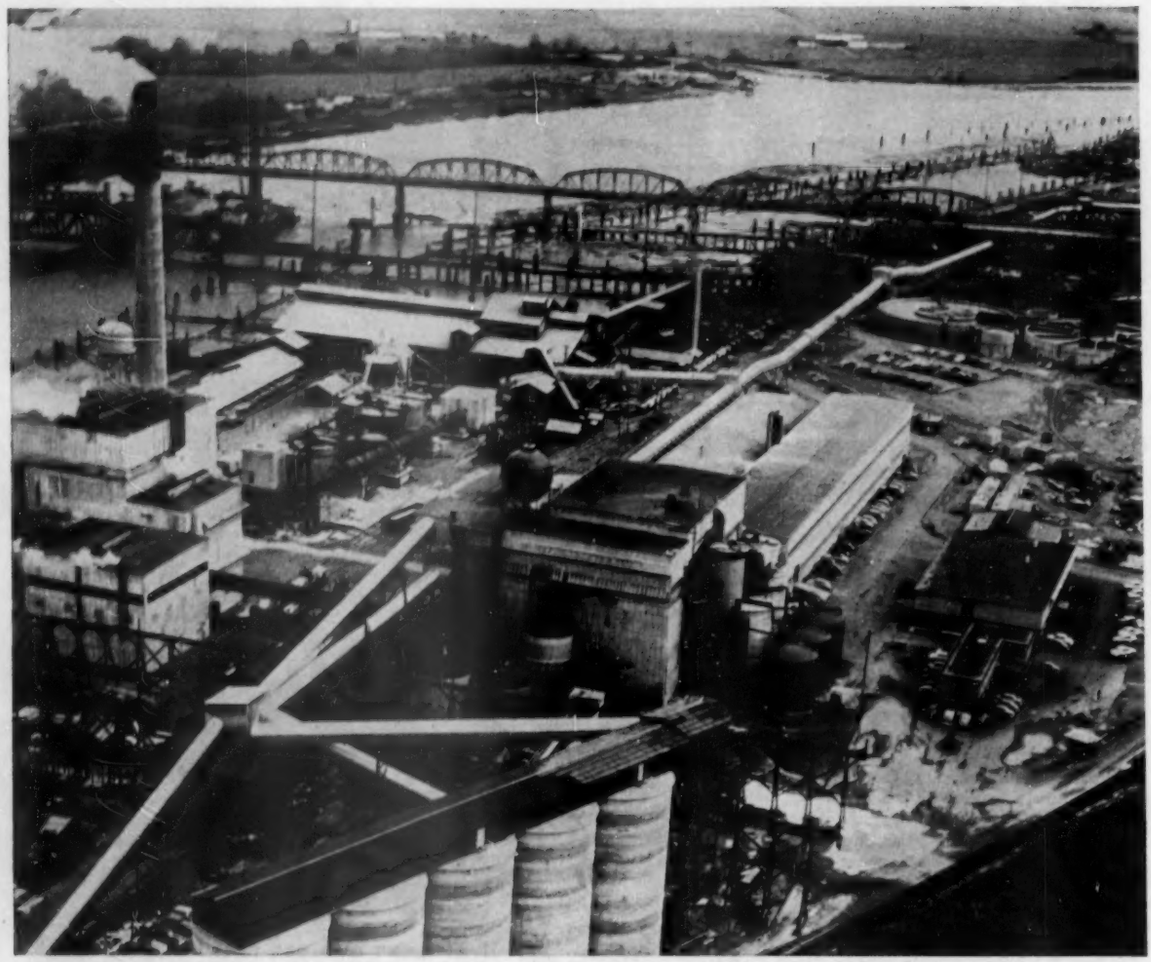
City..... *Zone*..... *State*.....

Your Name and position.....



Hungry paper mill fed by longest conveyor belt system of its kind... *all U. S. Rubber belts*

In keeping with its progressive management, this paper mill* located in the State of Washington and one of the world's largest, has consistently modernized and cut operating costs. Latest advancement is this great conveyor belt system which carries 250 tons of wood chips per hour.

This belt system, traveling one and a quarter miles—(the longest ever installed in a paper mill) utilizes two and a half miles of 36" wide U. S. Giant® Conveyor Belting specifically designed for operation over 45-degree troughing idlers. The belting was designed, and built, by United States Rubber Company through *Three-Way-Engineering*—in which "U. S." engineers work hand in hand with engineers representing the mill officials and those representing the designers of the conveyor equipment. This mammoth belt system loops under the Pacific Coast's main highway (No. 99) and over three transcontinental railroad lines. Its savings in time and money are almost impossible to calculate.

This paper mill also uses many other "U. S." products to deliver economy and efficiency in its manufacturing process. These include V-belts, expansion joints, pinch valves, rubber mountings, plastic pipes, hose and mattings. Everywhere you go in industrial America, you will find "U. S." serving the manufacturer. 26 District Sales Offices are strategically located—each staffed with engineers ready at all times to help you. There is also a nationwide chain of "U. S." distributors. Or write to address below.

**Owned by Weyerhaeuser Timber Co.*

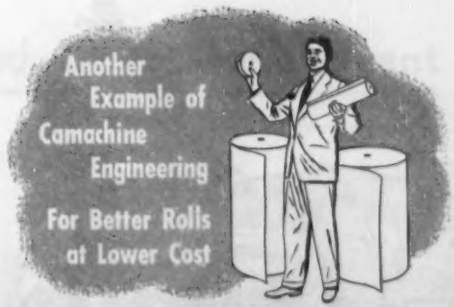
"U. S." Research perfects it..."U. S." Production builds it... U. S. Industry depends on it

UNITED STATES RUBBER COMPANY

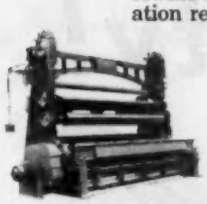
MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

Hose • Belting • Expansion Joints • Rubber-to-metal Products • Oil Field Specialties • Plastic Pipe and Fittings • Grinding Wheels • Packings • Tapes Molded and Extruded Rubber and Plastic Products • Protective Linings and Coatings • Conductive Rubber • Adhesives • Roll Coverings • Mats and Matting

Hydraulic RIDING ROLL LIFT

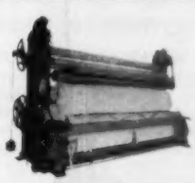


Smooth-acting, balanced control with no manual effort. Hydraulic cushioning prevents shock at the maximum upward-travel point of the piston and assures impact-free contact between riding roll and rewind shaft at the start of winding. Automatic operation reduces down-time between sets.



CAMACHINE TYPE 20

Widths to 310". Maximum rewind capacity may be either 42", 60" or 72" dia. Speeds up to 5,000 fpm* on paper and paperboard.

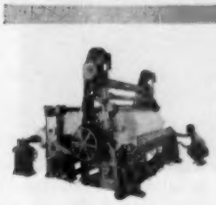


CAMACHINE TYPE 19

Widths to 192". Maximum rewind capacity may be either 42", 60" or 72" dia. Speeds up to 3,500 fpm* on paper and paperboard.

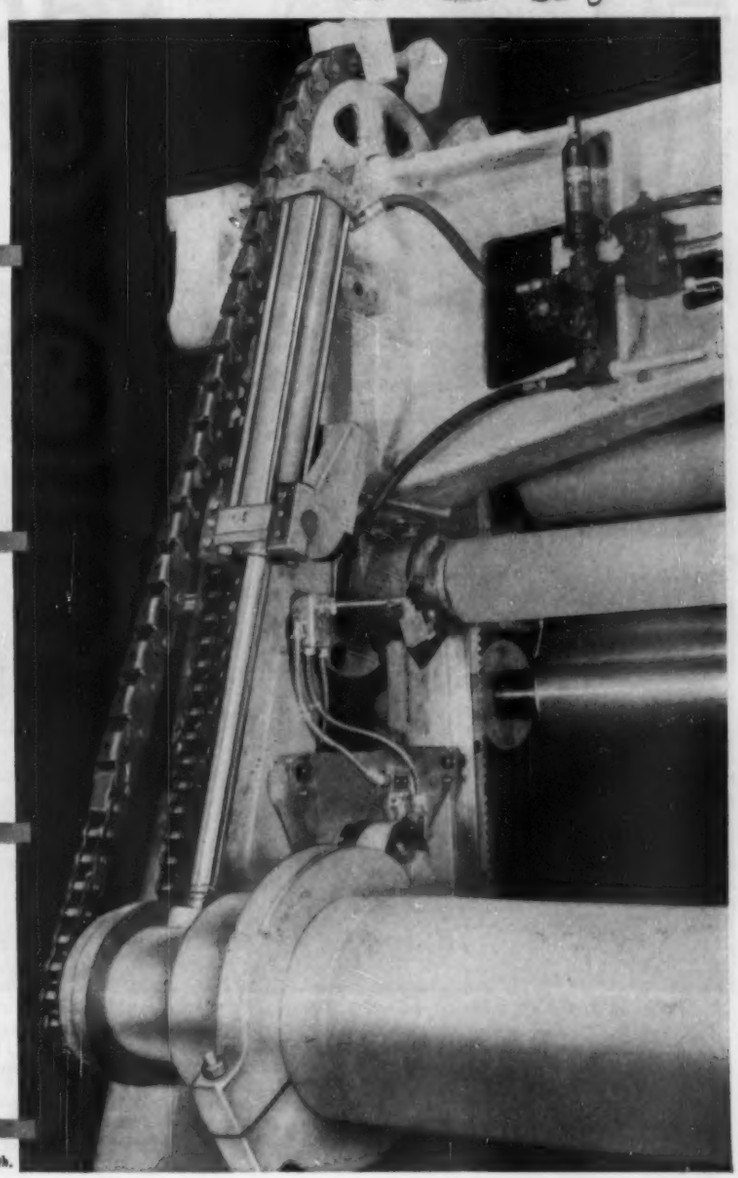
CAMACHINE TYPE 18

Widths to 150". Maximum rewind capacity may be either 42", 60" or 72" dia. Speeds up to 2,500 fpm* on paper and paperboard.



CAMACHINE TYPE 14

Widths to 92". Maximum rewind capacity may be either 38", 50" or 60" dia. Speeds up to 1,800 fpm* on paper and paperboard.



* Speeds depend upon characteristics of material and machine width.

Don't wind up with less than a Camachine®

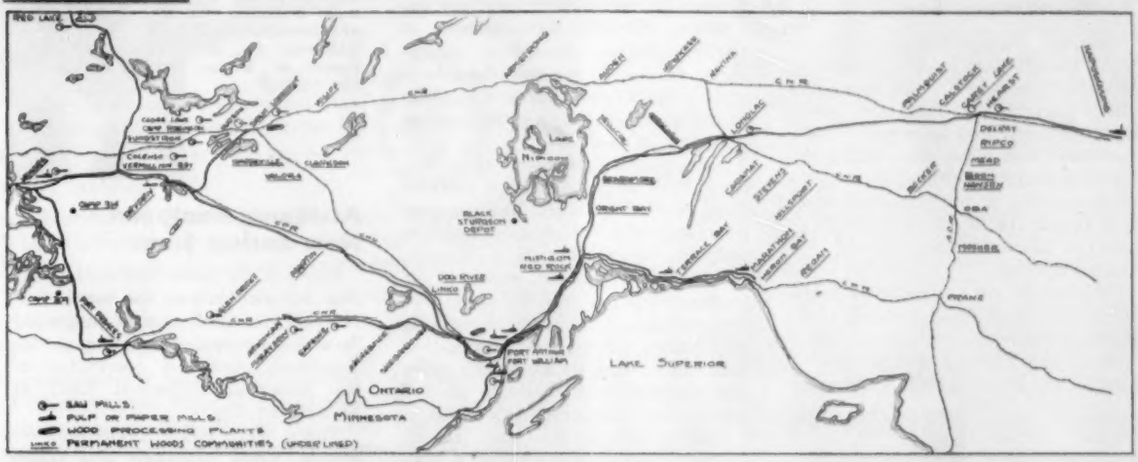
Cameron Machine Company • 61 Poplar Street • Brooklyn 1, N. Y.

Paul Bunyan, legendary one-man construction gang, could really lift a shovelful of earth. But, while Bunyan is a myth, the production record of American Cranes is not! The whole day long, nothing can outproduce an American Crane. The extra capacity and faster, smoother operation built into American Cranes add extra-profit production hours to each day. American Cranes do more, with less maintenance than anything in their field!

Ask your distributor for details on the big capacity, cost-cutting American Machines! Available as a crane, shovel, backhoe, clam, drag or magnet crane.

American Hoist

American Hoist & Derrick Co. **St. Paul, Minnesota**



HOW NORTHWEST ONTARIO LOGGING HAS DEVELOPED

NORTHWEST ONTARIO development with reference to the pulp and paper industry is indicated on this map by Northwestern Ontario Timber Operators Assn. A few years ago logging was confined to the winter months and the river drive was depended on as the only means of transporting logs to the mill. Mechanization has made most camps workable the year round as pulp logs can be brought out over snow roads by tractor and truck. There are about 200 operating camps in the area employing nearly 9,000 persons with payroll more than $30 million. In this area there are 11 pulp and paper mills, approximately 372 sawmills (portable and stationary) and two treating plants. Sustained yield is practiced, and research is aimed at developing more species commercially.

Canada Ships Less and Less Wood—and Why

EXPORTS OF PULPWOOD from Canada are gradually declining as a result of the increasing consumption in domestic mills. In most provinces there are restrictions on export of such wood in order to insure an adequate supply of raw material for their own mills.

Quebec has been strictly controlling pulpwood exports for some time, and under legislation in Ontario the last stick of pulpwood will be exported legally from that province in 1957.

Ontario Restrictions

This Ontario legislation was based on a controversial report of Major General J. A. Kennedy, who also recommended a plan whereby the province's forest lands would be arbitrarily parceled out among pulp mills and lumber mills in accordance with the Forest Service's concept of most effective prospective use. This phase of the report was never put into effect but the general's suggestion that exports be gradually tapered off over a term of ten years was adopted.

At present, principal importers of Ontario pulpwood are Detroit Sulphite Pulp & Paper Co., Detroit; Hammermill Paper Co., Erie, Pa., and Northern Paper Mills, Green Bay, Wis. Some Middle Western mills which used to depend largely on Ontario wood have turned to sources closer home or have, like Rhinelander Paper Co., turned to other provinces.

Rhinelander recently negotiated a contract whereby it imports considerable pulpwood from Saskatchewan, one of the few provinces of Canada that so far has no pulp mill, although two groups are making preliminary surveys with a view to building mills there.

Some large Middle West companies which used to import large quantities of pulpwood from north of Lake Superior have established their own Canadian subsidiaries with mills—Marathon, KVP and Kimberly Clark.

West Coast Trend

The same trend has been in evidence on the West Coast. Years ago strict control was established over pulpwood exports by the provincial government, and wood from Crown lands alone is exportable, and under license. A few companies in the Puget Sound area have been getting pulp logs from British Columbia, but the volume has not exceeded 100 million bd. ft. since 1949 and the ten-year average 1943 to 1952 inclusive has been about 60 million bd. ft.

Where export of pulping material is involved in British Columbia, the tendency has been to bark and chip the logs in the Canadian mills and ship the chips by barge. Crown Zellerbach's International Pulpwood Supply Co. was one of the leaders in this field with its own plant on the Fraser River near Vancouver.

Several companies are in the business now, notably Alaska Pine & Cellulose and B. C. Forest Products.

But chips are exported from these companies only because their sawmills are so located that it is easier to ship to the U.S. than to Canadian mills. However, both are already shipping a large proportion of their chips to Canadian mills—Alaska Pine & Cellulose to its own pulp mills, and B.C. Forest Products Ltd. hopes to have its own pulp mill in operation soon near Crofton on Vancouver Island. Hillcrest Lumber Co., an independent operation, recently installed a chipping plant and has been exporting through Crofton to U.S. pulp mills, but it will doubtless market them in B.C. when the new mill goes into operation.

PULPWOOD SECTION

High Cost of Wood in Canada is Discussed At Woodlands Section

HOW TO REDUCE costs of pulpwood production in the forests of Eastern Canada—through more efficient harvesting, more and better mechanization and improved transportation was a question that commanded major attention at the annual meeting of the Canadian Pulp and Paper Assn.'s Woodlands Section in Montreal Mar. 23-25, attended by 800.

"Although our woodlands have been placed on a sustained yield basis, wood costs of the industry east of the Rockies are too high," said J. H. Merrill, woods manager

J. H. MERRILL, Woods Mgr., Anglo-Canadian Pulp & Paper Mills — new Chairman of Canadian Woodlands Section.

of Anglo-Canadian Pulp and Paper Mills, Quebec, who is section's new chairman, succeeding J. B. Matthews, chief forester of Abitibi. Vice chairman is H. A. Sewell, Ontario Paper.

"Cost of wood represents more than 35% of our total manufacturing costs," he said. "Few of us recognize the hazards of such a situation and I am certain it is not recognized by the provincial governments."

The changes have been brought about in less than 15 years, said Mr. Merrill. Pulpwood has become twice as valuable as in pre-war years and thrice as valuable as in the early 1920's.

"In British Columbia, where wood costs are about half those east of the Rockies, the industry has doubled the number of its mills in the post war era," he said. "There is a continuing development in more newsprint mills in the southern states where wood can be delivered to a mill for only three-quarters of the cost of wood in central Canada today."

Gordin Godwin, assistant general manager of woodlands, Ontario Paper Co., described recent developments in mechanization in eastern Canadian woods. The principle of bringing the material to the machine rather than the reverse must be adopted if the major advantages of mechanical processing are to be realized, he said. Once this principle has been accepted, there are good reasons for eliminating handling operations through development of multi-operation processing equipment. At the same time, the inherently greater capacities of a machine to carry out each processing operation can be realized.

In a panel discussion of camps, those built of prefabricated sections were favored by K. K. Neilsen, logging engineer for Anglo-Canadian Pulp & Paper Mills. D. L. Carter, the Ontario Paper Co., reported his company used a type of camp that was portable in sections, containing bunkhouse, dining hall, recreation hall, office, warehouse, drying room and washrooms. It could be moved easily over the company's roads.

Another informative panel was on factors affecting the size of a sustained yield management license in which G. B. Amidon, Minnesota & Ontario Paper, presided, with Ross R. Douglas, Alaska Pine & Cellulose; A. Bickerstaff, Ottawa; J. B. Miller, Kimberly-Clark; J. B. Springer, James Maclaren Co., and W. L. Johnson, New Brunswick International, participating.

More Woods, Mill Applications for Diesels

An extensively re-designed and improved diesel engine is reason for a new diesel engine plant and division of Harnischfeger Corp. at Crystal Lake, Ill., 50 miles northwest of Chicago. The new engines, with a 6-cylinder model going up to 275 hp. or more at 800 lbs., and with a unique lightweight all-aluminum crank case, have greatly extended the potential applications of P & H diesels in portable saw-rigs, general logging operations, marine and industrial mill uses.

Henry Harnischfeger, vice president from the parent Milwaukee firm, Frank C. Edwards, a company veteran and now general manager of the new division, D. E. Sweeney, sales manager, Dr. K. C. Karder, research director and engine designer, welcomed over 30 industrial editors to a preview.

Hps now range from 58 to an actual rating of 255 hp, in 2, 3, 4, and 6 cylinder, two cycle diesels. The 4's go to over 200 actually and the 6's to 275 or more and they have 36% greater power input. They go to 1800 rpm's and get rid of btu's faster. The company claims no less than 58 improvements.

JAMES A. HOLEKAMP, Logging Engineer in South for APA, headquarters at Sylacauga, Ala., officiated at Shreveport meeting.

Accidents Analyzed; New Barker Seen

Costs of accidents and compensation for accidents in the woods was related to overall cost of pulpwood in a 7-state spring meeting of the Southwest technical committee of the American Pulpwood Assn. at Shreveport, La.

There were panel discussions on unsafe wood practices and other matters. Four steps in a good safety program were described as:

Education of workers, engineering to eliminate hazards, enforcement of rules and a good investigational procedure for accidents.

Tom Busch, International, is committee chairman, and J. A. Holekamp officiated for APA. C. G. Snyder and C. E. Roberts of I.P. and A. G. Curtis of Gaylord were program arrangers.

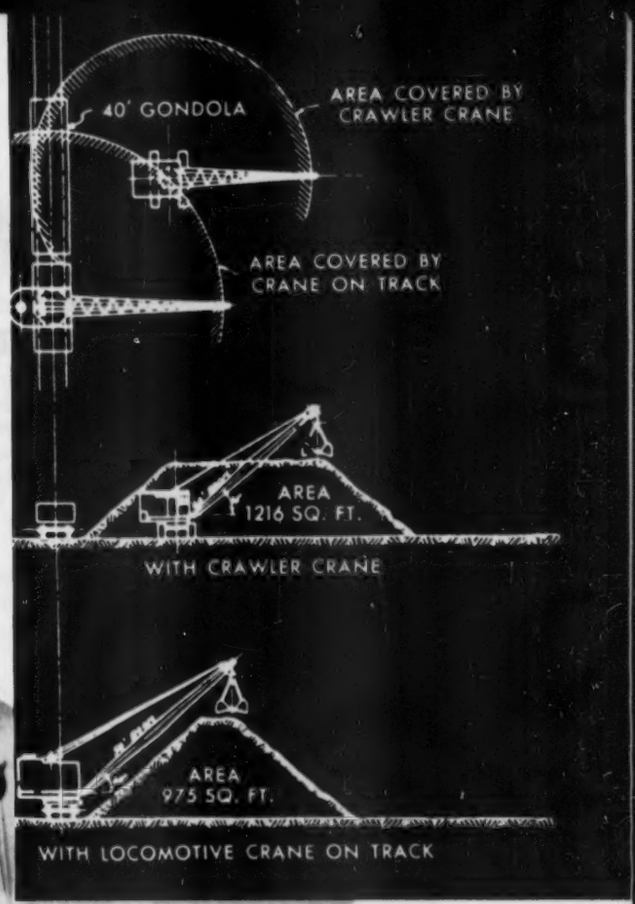
The new Hurricane sawlog debarker was demonstrated at the Boosier City plant of Wood Treating Chemicals Co. This is a cutterhead type, with high speed feed and rugged parts, considered valuable to a mill cutting up to 60 M bd. ft. per day.

Chemical Debarking Project Is Extended

Continued interest in chemical debarking has resulted in sponsoring companies extending the APA project a fourth year and also into Canada, where a joint U.S.-Canada meeting was held, chairmanned by L. J. Kugelman, International Paper.

Dr. Hugh Wilcox discussed translocation and distribution of arsenic in the wood and bark of trees and retention of arsenic in pulp and pulp liquor. Dr. Felix Czabator commended cooperative type experimental studies. A summary of chemical debarking equipment was discussed by Dr. E. C. Jahn. Dr. DeRosier demonstrated a tank used by Eastern Pulp Wood Co., Calais, Me. and a stencil type brush with a spring valve for controlling sodium arsenate flow.

STUDY THIS DIAGRAM!


40' GONDOLA
AREA COVERED BY CRAWLER CRANE
AREA COVERED BY CRANE ON TRACK
AREA 1216 SQ. FT.
WITH CRAWLER CRANE
AREA 975 SQ. FT.
WITH LOCOMOTIVE CRANE ON TRACK

● Ever thought about what tracks cost you in storage? Maybe your conditions are different, but if you are using track type equipment you are paying for it through the nose.

Look at the diagram!

Your Northwest Crawler goes anywhere. It gives you a full 180° coverage. It can move into a pile a locomotive job can't reach, or back out as it piles new shipments.

It will travel up and down the full length of a train without an extra line of track and it will travel over "flats" or through drop-end gondolas.

Crawler mobility means high loading capacity wherever and whenever you want it. Small mills can rout a crawler machine from pulp yard—to the pond—to the loading dock—wherever it is needed. It is a proved piece of paper mill equipment and it is serving such well-known paper companies as St. Regis Paper Co., St. Joe Paper Co., Brunswick Pulp & Paper, K.V.P., Abitibi Paper Company, and many others.

Plan now to have crawler advantages in your pulp yard—and specify Northwest advantages for fast handling and economy of operation. Let us send you the whole story.

NORTHWEST ENGINEERING COMPANY
1516 Field Building, 153 South La Salle Street
Chicago 3, Illinois

Handling pulp at Abitibi Pulp and Paper Co., Ft. William, Ont. This is another of the many paper companies that are using Northwest Equipment.

NORTHWEST

The Crane That Goes Anywhere

10 to 50 TONS

REMEMBER OUR EDITORIALS?—HERE ARE VIEWS OF EXPERTS

IN THE AUG. 1953 and Oct. 1953 issues of PULP & PAPER, some criticisms were voiced editorially of past U.S. Forest Service Timber Resources Reviews, with a view toward stimulating a correction of grave and long enduring errors and misrepresentations before the great Review of 1955 goes on the record for keeps. We suggested, for one thing, a greater degree of private industry participation.

There was some criticism of the Forest Surveys, on which they are partially based.

A substantial bombardment of letters ensued. Most were friendly and quite calm.

In this connection, some pulp and paper industry leaders suggested that PULP & PAPER should publish an address that Mr. Corydon Wagner made at a recent Chamber of Commerce meeting. Major portions of it—publicized for the first time in any publication in this field—appear in the left hand column.

Meanwhile, Mr. Robert W. Cowlin, at our invitation, has written an article especially for PULP & PAPER on the subject of the Surveys and the Resources Review. This appears in the right hand column.

So here you have them—the pro and the con.

We hasten to emphasize that Mr. Cowlin did not write his article in "answer" to Mr. Wagner, although he was advised that both statements would be published here. It is obvious he has restricted his comments to a narrower field than Mr. Wagner. But—in a general way—they are the "affirmative" and the "negative" sides.

CRITICISM—

U. S. Surveys Tag Behind; More Industry Cooperation

By Corydon Wagner

Vice President, St. Paul & Tacoma Lumber Co.
Tacoma, Washington

THE PATTERN of forest land ownership for the U.S. is a haphazard blend of federal, state, and private holdings which is not dissimilar to the pattern that has evolved over the centuries in the principal forest countries of Europe. There seem to be logical reasons for each type of ownership. In European countries the practice of forestry has been benefited by a constructive competition between these groups.

Of the 460 million acres of commercial forest land in this country, approximately 25% is publicly owned, 15% industrially owned, and the balance, 60%, belongs to some four million small owners holding less than 5,000 acres each. In the West, the federal agencies own 60% of the sawtimber.

Private forestry under the spur of necessity and opportunity is in a truly dynamic state. Within the last decade the forest industries have reached a notable degree of economic maturity and stability. It is evident in the permanent and elaborate plants that have been built, the extensive installations to utilize formerly left-over material, new product plants developed as a result of market extension work and research, and expanded activity in planting and seeding.

Tree growing is profitable and explains the 29 million acres of private land now in registered tree farms dedicated to growing forest crops

Continued on page 104

IN THE LEFT HAND "CORNER"—CORYDON WAGNER, Vice Pres., St. Paul & Tacoma Lumber Co., and a leader in American Forestry Association and other forest industries activities. His mill supplies chips to the paper industry.

IN THE RIGHT HAND "CORNER"—ROBERT W. COWLIN, Director of the Pacific Northwest Forest & Range Experiment Station, U. S. Forest Service. A veteran of the service who has written articles in the past for PULP & PAPER.

DEFENSE—

Forest Survey Improves; Review Will be Reliable

By Robert W. Cowlin

Director, Pacific Northwest Forest & Range Experiment Station, U.S. Forest Service

WHAT IS INCLUDED in the Forest Survey? How is it conducted? What is its relation to periodic appraisals made by the U.S. Forest Service of the forest resource situation such as the 1945 Reappraisal and the current Timber Resource Review? These and related questions are evidently not widely understood, possibly because they have not been recently or completely explained.

The Forest Survey authorized by the McSweeney-McNary Forest Research Act of 1928 is a truly national survey of the forest resources. It obtains through objectively planned field surveys the basic facts on: (1) area and condition of commercial forest land; (2) volume, species, and quality of the timber supply; (3) ownership of forest land and timber stands; (4) rates of timber growth and mortality from insects, disease, fire, and other causes; (5) volume of timber cut for lumber, plywood, pulp and other timber products; and (6) present consumption and prospective requirements for the timber products.

Thus the Forest Survey is the original source of comprehensive facts on the condition and character of the nation's timber resources. All other surveys or appraisals of the timber resource situation on national, regional, and state bases must start from this common point.

The Survey is conducted by the Forest Service through its regional forest and range experiment stations,

Continued on page 106

MAKE MOVES IN MINUTES
SAVE TIME... HANDLE MORE PULPWOOD PER DAY WITH A
LORAIN *SELF-PROPELLED* CRANE

BROWN COMPANY, *Berlin, N.H., get big production from their big Lorain Self-Propelled Crane, model SP-524. They use a sling to unload yard wood (1 to 2 cords per sling) from trucks to storage piles and onto mill conveyors. Cords weigh from 2 to 4 tons, with heaviest loads averaging from 6,000 to 16,000 pounds. Also, used for construction and maintenance work around the mill. This Lorain works two shifts daily, six days per week.*

The mobility of Lorain Self-Propelled Cranes can cut costs wherever you handle pulpwood. In the mill yard, they move quickly to any location to unload trucks, work in any stockpile area, load conveyor or flume, run up and down a line of cars for unloading.

In the collection yard, truck and car loading and unloading and stockpiling operations are handled faster at lower cost with these versatile machines.

In capacities to fit your needs and equipped with grab, grapple, sling or rake, Lorains can handle stacked, bundled, frozen or jack-strawed wood as required.

Lorain Self-Propelled Cranes are a one-man machine. They roll on rubber-tires at speeds up to approximately 7 m.p.h. The operator controls both the travel and lifting operations from his cab. Air steering and air brakes add to ease of operation and maneuverability.

Lorains are available on a wide variety of rubber-tire or crawler mountings. Capacities range up to 61 tons. Ask your Thew-Lorain Crane Distributor for the complete Lorain story.

THE THEW SHOVEL CO., LORAIN, OHIO

THEW LORAIN®

SEND FOR FREE PULPWOOD HANDLING BOOKLET

Contains pictorial reports of how others in the pulpwood industry are saving time and money with many styles of Lorain Cranes. You'll want a copy for your files. Write today to THE THEW SHOVEL CO., LORAIN, OHIO.

INTERNATIONAL PAPER CO. *use a Lorain-TL Self-Propelled Crane, model SP-254, equipped with specially designed gooseneck boom and 4-bridle wire rope sling to load pulpwood from woods trucks to rack cars at their Thomasville, Ga. collection yard.*

CRANES FOR PULPWOOD HANDLING

PULPWOOD SECTION

CRITICISM: U. S. Surveys Tag Behind

Continued from page 102

permanently—the employment of 5,600 foresters in private enterprises, a number greater than the total employed today in federal agencies—the purchase in late years of some 12½ million acres of forest land by pulp and paper companies in the South alone, and some 3½ million acres of land purchased by lumber firms since 1944.

The purpose of the Forest Reserves, when established 50 years ago, was as the name implies, to hold the timber for eventual use when and as needed by industry. The Forest Service was expected to assist industry into ways of good forest management. It earned such a reputation during the early decades of its existence.

About 20 years ago when the U.S. Forest Service embarked on a program of acquisition of private forest land and regulation of cutting, it necessarily doomed the basis for confidence and good will with the forest industry. The excuse was concern over future supplies of timber. It must be admitted that up until a decade or two ago, there was reason for concern if judgment was based only on the data which passed for fact on timber supply and new growth.

Congress decided it needed facts. In 1928 the McSweeney-McNary Act authorized the Forest Service to make the first complete survey of the nation's timber resources. Twenty-five years have elapsed, and in the last report of the Chief of the Forest Service for the year 1952, he stated that as yet 186 million acres, or approximately 30% of the acreage ordered inventoried, remained to be initially surveyed. Obsolescence has rendered valueless much of the report on the 70% of lands surveyed, due to a complete revolution in utilization of forest material.

In this same span of 25 years, Finland, a country of 4½ million people with a forest and area roughly the equivalent of the Douglas fir belt of Washington, Oregon, and Northern California, has completed three such surveys and developed data of unquestioned acceptance.

The Finnish Government, in the mid-19th century, debated a strict regulation of their lumber industry to preserve their diminishing forests, but the reasoning prevailed that if the prices of stumpage and the products were permitted to reach a more profitable level, the land owners would be induced to pay increased attention to stimulating maximum growth and safeguarding the crop. We in the U.S. are learning that truth a century later.

Expansion of National Forests

The expansion of the National Forests through acquiring private land by outright purchase or in various types of trades has been proclaimed a major necessity by official spokesmen of the Forest Service on numerous occasions in the last 20 or 30 years. Some twenty million acres appear to have been added to the government's holdings of forest land in the last three decades, mostly in the East, but it is not believed that this total includes the acreage involved in special deals such as trades of cutting rights on federal lands for private cut-over lands. This has become a widespread device.

The Chief of the Forest Service in 1933 set the goal for acquisition of 134 million acres of forest land by federal government plus 90 million by various states. This suggested taking two-thirds of the total acreage in private hands. In 1940 Secretary Henry Wallace added this comment: "By all odds the most immediate and urgent forest problem in the Northwest is excessive private ownership. I give public acquisition of forest lands first place in a remedial program."

The Chief's Report for 1950 scaled down the amount of land still unacquired, but believed primarily suitable for National Forest purposes, to an additional 35 million acres, and this same figure was mentioned in 1952 by the Assistant Chief as the acquisition called for under the Forest Service's long range policy. This continued yearning of a federal bureau for more land assumed to be suitable for private operation holds little comfort for those who believe that major needs of this country are jobs and taxes, supplied by private enterprise.

The acquisition program and its companion-piece, the regulation of cutting on private lands by public authority, has dominated the thinking and doing of the U.S. Forest Service for 20 years, and has undoubtedly absorbed a healthy chunk of their congressional appropriations and other income. Scanning budget requests won't supply any data as to the real amount. Even more costly, perhaps, is the neglect of other functions.

Forest road building is an example. In the several recent years of extremely active demand for forest products, it is conspicuous that the National Forests produced a pitifully small share. Even today it appears that production is about one-half to two-thirds of what is believed to be their proper capability.

When challenged on this point of under-cutting, representatives of the Forest Service frequently retort with the excuse of lack of money and lack of personnel. Many competent observers believe a better solution would be a change of policy, with a re-allocation of effort and funds.

To provide a proper basis for cooperation it is desirable that the program of the Forest Service and other federal bureaus for large scale acquisition of private lands be stopped, and that change in policy announced. Exceptions may be desirable where administrative units need blocking out. But this flexibility should work both ways and serve to benefit certain private units as well.

Favors Forest Survey Changes

It is desirable that the national survey of forest resources, known as the Forest Survey, be reorganized on a cooperative basis with industry and states participating, to the end that reasonably complete and accurate data can be available in the minimum of time. As has been inferred earlier, the results from the survey to date have better served propaganda than any profound understanding of the state of our timber resources.

At the present rate, some 8 to 9 years must elapse before all of the Forest lands will have been initially inventoried. In the meantime, important areas will have been reappraised the second, third and possibly fourth time. The effect of new growth, changes in standards of measurement, elimination of gross error, and other reasons not specified are illustrated in a recent recap covering 19 states.

By appraisal made in 1944 and prior years Pacific slope acreage showed 676 billion bd. ft. By the latest appraisal in 1947 and later years the same acreage showed 894 billion bd. ft., or an increase of 218 billion bd. ft. which amounts to 32%. This substantial increase in timber supply is after an average of ten years of intensive logging.

Another extreme example is on a restricted area so accessible by a network of roads that it could have

Continued on page 108

best...

for your long haul

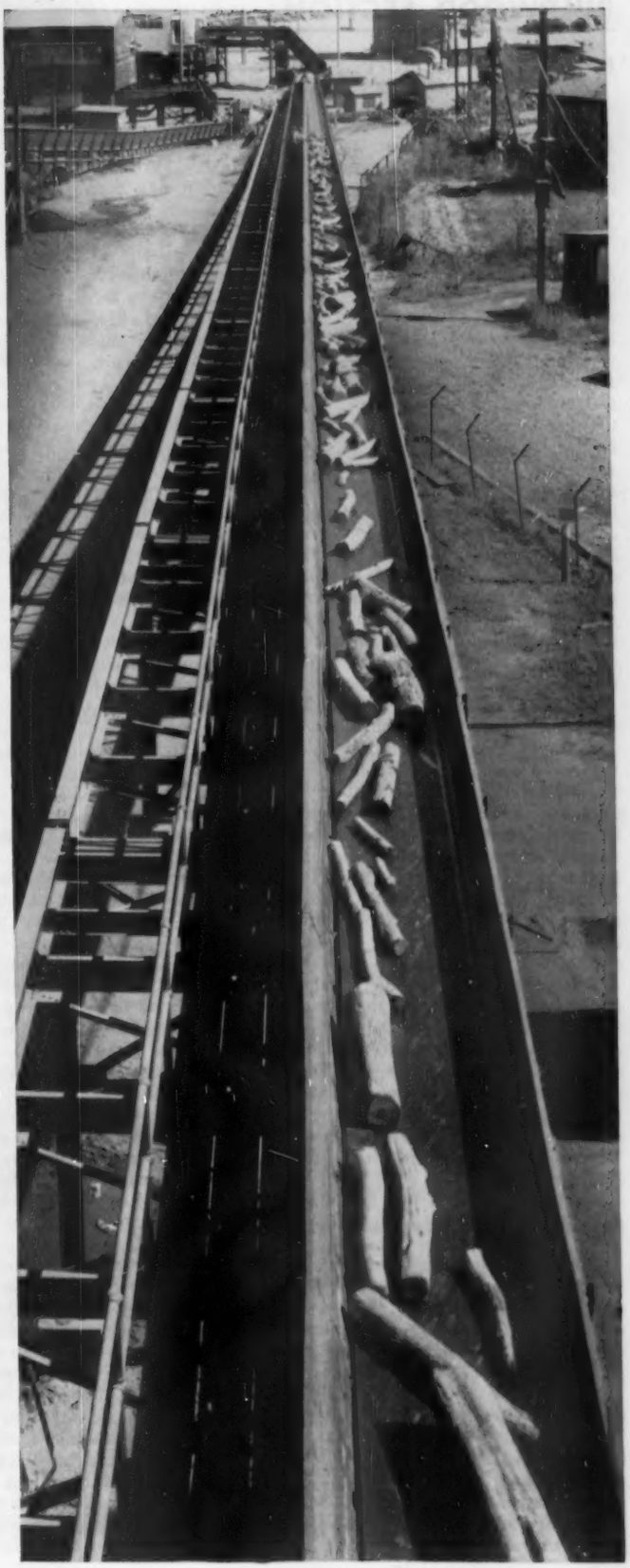
But, what's best for the long haul is not necessarily best for the short haul...or medium.

How, then, to tell the exact pulpwood, chip or waste-handling system that's right for you...the one best method that will deliver most efficient service at lowest possible cost.

There's where Chain Belt Conveyor Engineers fit right into your picture. Because Chain Belt Engineers frankly have no ax to grind. Chain Belt manufactures a complete line of pulp mill handling equipment. We can recommend without prejudice the conveying medium...chain, belt, or elevator...that you need.

In this mill, Chain Belt Conveyor Engineers recommend Rex® Flat Belt Idlers to carry barked logs to the chippers. The framework to the right is the foundation of a new belt conveyor line that will handle pulp wood to the barkers. If the haul had been short, chances are they would have used a Rex Chain Conveyor.

Why not turn your handling problems over to Chain Belt Conveyor Engineers ...to men whose only interest is in seeing that you get the best possible handling system for your particular needs. It's our creed and it's been profitable to us...and to you. Contact your local Chain Belt District Office or write Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.



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DEFENSE: Forest Survey Improves

Continued from page 102

generally in direct cooperation with state and private agencies. The degree and kind of such cooperation, of course, varies widely from region to region and from state to state.

To insure basic uniformity of data and to promote comparability of state and regional statistics a national Survey manual was prepared in 1948. This manual prescribes subject matter covered in the Survey and specifies and defines minimum technical standards and terms. At the same time it provides maximum latitude for desirable and justifiable regional variations. The manual is essentially a codification of accumulated experience and instructions of 20 years' field work of the Forest Survey throughout most of the country's forest regions. It is subject to revision as changed conditions justify. Copies of the manual have been distributed to cooperators, forest schools, and other interested agencies.

The statistics on forest inventories and timber growth and mortality in the Forest Service Reappraisal of 1945 were based chiefly upon Forest Survey information. Where Survey data were entirely lacking or obsolete such data were obtained by special surveys or from other sources. Moreover, data so obtained were integrated with the regular Forest Survey data to supply reliable information on a regional and national scale.

This also applies to the Timber Resource Review, except the Forest Survey base will be greater because of the progress of the latter project during the intervening period. This means less reliance on special surveys or estimates and, consequently, statistics of greater reliability in the Timber Resource Review than in the Reappraisal.

Reasons for Misunderstandings

The preceding paragraphs answer in a general way the questions which opened my article. But much of the misunderstanding of the Survey apparently stems from lack of knowledge of details, particularly with respect to timber volume estimates.

A recurring question is the reason for differences between timber volume estimates made at the time of original inventories by the Forest Survey and by recent reinventories. Many reinventories are showing an apparent increase in sawtimber volume even in areas where timber cutting has been great in volume. Primarily such differences have resulted from changes in Survey standards and specifications.

In establishing timber volume specifications for the Forest Survey, the general objective has been to set a standard compatible with the best utilization practiced currently and anticipated in the immediately foreseeable future. As utilization has become more intensive the standards have been changed to match. For example, in the Douglas fir subregion of Oregon and Washington, the minimum size tree considered in estimating sawtimber volume was 15.0 in. in the original inventory (1930-33); in the recent reinventories it has been reduced to 11.0 in. in diameter.

Volume tables used during the two surveys have also been changed to allow for the more intensive utilization common now. This means that trees of the same dimensions would contain considerable more bd. ft. volume using the new volume tables than the old.

Another change has been in the specifications of cull trees in the Douglas fir region. During the 1930-33 survey a tree that was not at least one-third sound was culled, i.e., no volume was assigned that tree. Now a tree containing less than one-quarter of its volume in sound wood is culled. Moreover, an estimate is made of this tree's sound wood volume and included in a tabulation of total sound wood volume.

Other instances of changed specifications could be cited.

Significance of these points can be illustrated by analyzing comparative figures in the Douglas fir subregion. Fourteen counties in western Oregon and western Washington were reinventoried during 1947-52. This sawtimber volume at the new specifications totals 284 billion bd. ft. In 1933, at the specifications and standards then used in the Forest Survey the sawtimber volume totaled 254 billion bd. ft., an apparent net increase of 30 billion ft., or 12%. However, if the 1933 inventory were recalculated to allow for the current more intensive standards, the volume would have totaled 303 billion bd. ft., or 17 billion ft. more than is now shown for this area.

Of course, timber growth is increasing throughout the West. Large scale logging really got under way around World War I. During the early surveys these extensive cutover areas had not yet produced new forests of sawtimber size. Now some 30 or 40 years after cutting, large areas of young growth are moving into the sawtimber classification each year. All these factors contribute to misunderstanding when direct comparisons of inventories are made without analysis of differences.

Comparisons have also been made between results of recent Forest Survey initial inventories and earlier extensive estimates made (not at Forest Survey standards or intensity) for the same areas. Generally, the new surveys show greater volume. The reasons given above are applicable in these instances as well as when results of two Forest Survey inventories are compared.

Accuracy Standard

To insure reliability of results in modern Forest Survey timber volume estimates, an accuracy control is prescribed in the Forest Survey Manual. This accuracy standard varies from 5% per billion cubic feet in the East to 10 to 12% in the West and is the maximum sampling error in terms of one standard error.

An example of what such a sampling error means in terms of the timber inventory on a specific area is found in the recently completed reinventory of Lewis County, Washington. This county has a total live sawtimber volume of 32 billion bd. ft., International scale, ¼-in. rule. The sampling error calculated at the completion of the inventory was plus or minus 5.52%.

Actually the accuracy goal is being bettered in many areas, particularly where cooperation of other agencies has made possible greater intensification of Survey sampling.

Another fact not generally known is that salvable dead sawtimber volume is included in Forest Survey inventories now. The Forest Survey Manual defines "sawtimber volume" as "net volume in bd. ft., International ¼-in. rule, of live and salvable dead sawtimber trees to a merchantable top" and defines "salvable dead trees" as "standing or down dead trees which are considered merchantable by regional standards."

This illustrates not only the fact that all timber volume is included in the inventory but also a cardinal principle of the Forest Survey. The latter is the allowance of full latitude to field offices in putting the Survey into practice. Other than satisfaction

Continued on page 108

Get them into the open fast!

Oliver "OC-3" with winch and front-end loader skidding logs.

The maneuverability of the Oliver Industrial "OC-3" crawler is amazing in tight spots. In fact, its unusually high clearance, power (21.85 drawbar h.p.) and controlled differential steering, enable you to work in mud, over stumps, ruts...places an ordinary tractor would be useless.

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a complete line of industrial wheel and crawler tractors

Defense . . .

Continued from page 106

of the basic Forest Survey Manual requirements which are strictly technical standards, no restriction is placed upon field offices from Washington, D.C.

Throughout the history of the Forest Survey many agencies, public and private, have given valuable cooperation. Continued and strengthened cooperation will be a major factor in accelerating and intensifying the Forest Survey so that it will furnish up-to-date and complete data.

and Criticism

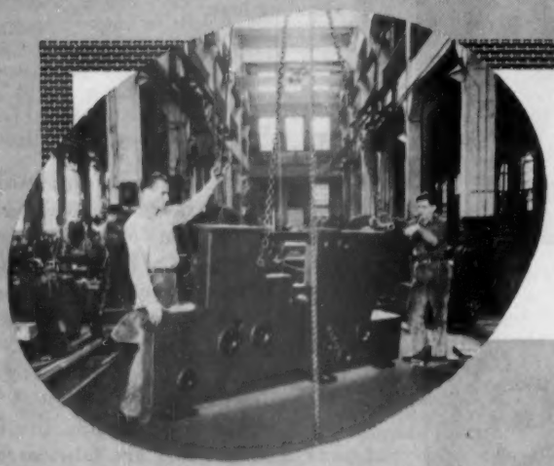
Continued from page 104

been cruised from a limousine. The size of the error was enhanced by failure to appreciate the merchantable values of a tract of low-grade timber when ideally located for transportation and logging. It is the Fort Lewis Reservation in Washington State comprising approximately 125,000 acres. The appraisal of 1938 showed 35,600,000 bd. ft. Up until the present date 100 million feet of timber has been logged with profit to the government and operators. The last estimate of the post forester indicated that a stand of merchantable timber of 200 million bd. ft. still remains.

Technically the hoarding of forests —merely protecting them from fire— is not practicing forestry. Forestry is defined to mean the continuous, economical, and profitable use of timber. After 50 years we are just now beginning to build systems of roads for access to our National Forests. Billions of feet of merchantable timber have been and are being lost annually through old age, wind throw, insects and disease, and fire. In the Western Pine Region alone the Western Pine Association estimates in the last 20 years 73 billion feet of timber has been killed from insects, principally on National Forests.

The policy declarations of the Chamber of Commerce of the U.S. on forestry represent much deliberation and experience. They affirm a belief in private enterprise in forestry, and are equally protective of the paramount public interest. I urge that these declared policies be reaffirmed, and a declaration be added to urge expediting and keeping current the timber survey using cooperating facilities to the utmost.

"From ingot to fourdrinier wire"



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Our machine shop doesn't make hairsprings or bridge beams, but our maintenance and construction operations demand equal versatility from our men and machines. Hub of an integrated operation such as ours, its skilled personnel are ready to machine a part to a fraction of a thousandth of an inch, on a tiny instrument part or a huge loom frame.

Because our plant is *completely integrated*, every wire we ship has undergone thorough and continual analysis, control and testing from the raw metals to your finished fourdrinier wire ready for quality paper production.

We are proud to say they are *truly ours* — "from ingot to fourdrinier wire."

EASTWOOD-NEALLEY CORPORATION
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New Pulpwood Barker Ordered by Scott

Sumner Iron Works will manufacture the Burnt River mechanical barker, originated and developed by Anthony Brandenthaler, owner and operator of Burnt River Lumber Co. at Baker, Ore. The mechanism was improved over the past two years by Lee Gyllenberg, working with Sumner engineers at Everett, Wash.

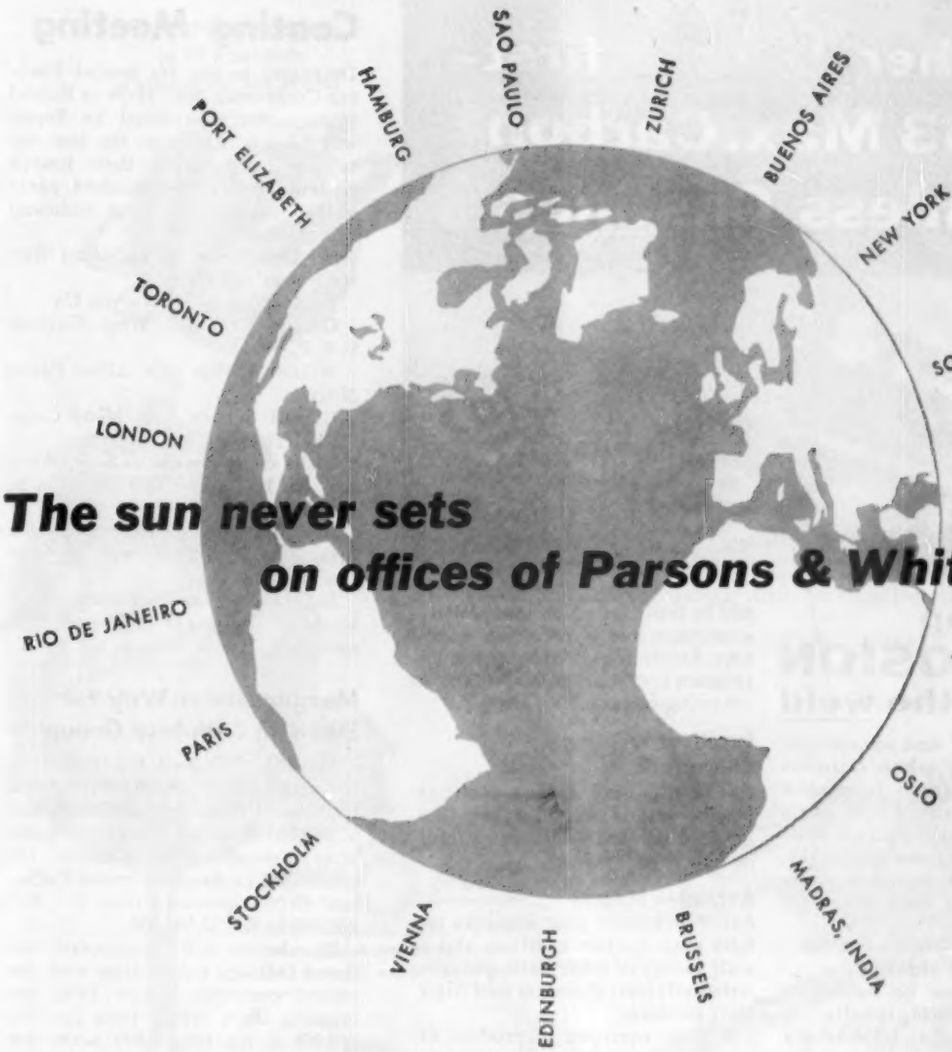
The company claims that logs ranging from 8 to 60 in. diameter can be barked successfully.

Scott Paper Co. at Everett, has ordered the first Burnt River barker for logs from 4 to 24 in. diameter and 8 ft. long.

The machine comprises a set of log turning and traversing wheels supported on steel frame, two wide face single barking heads, two narrow face double barking heads and two rotary brushes, air actuating cylinders, hydraulic power unit, etc.

Uses of Steel Strap To Be Told in Michigan

Arch Perry, an expert on usages of steel strapping for packaging and bundling, will discuss this subject at the May 20 dinner meeting of Kalamazoo Valley Tappi in Kalamazoo's Hotel Harris. Mr. Perry is with Signode Steel Strapping Co., pioneers in the field, whose steel strap and bundle tying machines are used extensively for paper and pulp.



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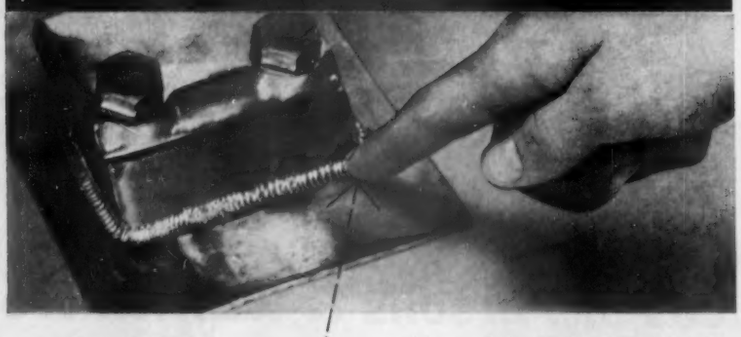

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Now, for the first time you can specify 0.03 Max. Carbon stainless *castings,* in many forms, for greater corrosion resistance. *ESCO* offers static and centrifugal castings in all 18-8 and 18-8 MO analyses, which are *guaranteed to contain a maximum of only 0.03 per cent carbon.*

No Carbide-Dissolving Anneal Needed After Welding

Most castings must be welded to component parts during installation. The higher the carbon content of a casting the more "carbide precipitation" during welding. Carbide precipitation often means severe corrosion adjacent to welds—unless the casting is heat-treated after welding. Heat-treating after fabrication is an always difficult, sometimes impossible job.

ESCO 0.03 max. carbon castings can be welded into working position and be ready for action immediately—without loss of corrosion resistance. Result: Dependable, corrosion-resistant operation. A definite cut in operating costs.

Excellent Welding Characteristics

ESCO 0.03 max. carbon castings may be welded as easily as any 18-8 grade of stainless—without harmful *carbide precipitation.*

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ESCO welcomes your inquiries on 0.03 max. carbon castings and a wide variety of other static and centrifugally-cast stainless and high alloy products.

We are equipped to produce to your specifications on one casting or an entire installation. If you prefer, our high alloy engineers will make a complete study of your corrosion problems. Or write for booklet 175, "*Esco* Stainless and High Alloy Products for the Process Industries" to: Electric Steel Foundry Company, 2167 N. W. 25th Avenue, Portland 10, Oregon.

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Exhibits Feature Coating Meeting

DELEGATES to the 5th annual Coating Conference May 24-26 at Poland Springs, Me., sponsored by Tappi, will have a chance on the last day to fire questions to their heart's content at this distinguished panel of top management and technical executives:

Gil Dickerman, Consolidated Water Power & Paper.

Fred Frost, S. D. Warren Co.

Gerald Haywood, West Virginia P & P.

William Kirkpatrick, Allied Paper Mills.

Russell Savage, The Mead Corp.

Paul Thoma, Time, Inc.

Visits can be made to S. D. Warren, St. Regis and Oxford mills in the vicinity.

Rex W. Hovey, executive vice president of Oxford, will keynote the meeting.

Big new feature—exhibits of all kinds of equipment from about 25 manufacturers.

Merger Under Way For Swedish Cellulose Group

Swedish Cellulose Co. reports a net profit of Kr. 20,200,000 ($4,000,000) for 1953, as compared with Kr. 17,300,000 for the preceding year, after reserving Kr. 2,400,000 for taxes. The profit of the entire Cellulose Group increased from Kr. 23,800,000 to Kr. 35,500,000.

The board will amalgamate the forest industry subsidiaries with the parent company before 1955, increasing share capital from Kr. 75,000,000 to Kr. 150,000,000, while the reserve fund will be raised by Kr. 15,000,000.

For 1953 the Board proposes a dividend of 10%. Export sales will not be affected by the amalgamation.

Burkhardt, St. Regis, Dies

R. E. (Ted) Burkhardt, gen. supt. of St. Regis mills, Kalamazoo, died Mar. 31 at the age of 62. He had been many years with St. Regis in Michigan and New York.

New ClO_2 Process

A new and economical method of producing chlorine dioxide has been developed and patented by Brown Co., Berlin, N. H. The new bleach does not attack pulp fibers and will be offered under license arrangements to users.

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EACH STOCK requires one or more of these basic treatments.

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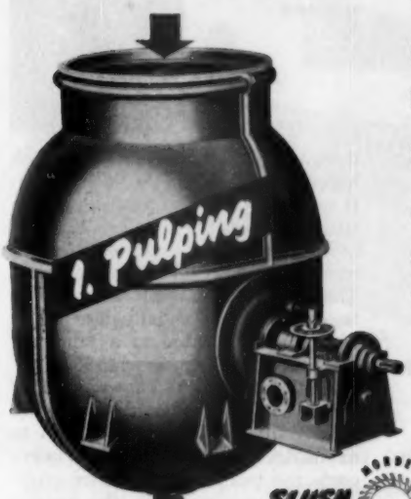
OUR EXPERIENCE in assisting mills to develop simple, effective and economical stock preparation systems is available to you upon request.



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...for completely defibering all pulps, papers and brokes (even wet strength) without auxiliary equipment.

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Other Representatives in most paper-making countries.

What Is A Felt Service Engineer?

—WITH SOME CASE HISTORIES ON HOW HE HELPS MILLS

By Larry M. Woodside

Chief Engineer, Technical Field Service
Albany Felt Co., Albany, N. Y.

WHETHER HE BE called a felt consultant or a service engineer, or even a field engineer, there has been a great deal of confusion within this industry relating to the function of this technical representative of a felt company. Some papermakers believe the term "engineer" is simply another name for a salesman; others, that he is strictly a "trouble-shooter"; and still others, that he is a textile man trying to tell papermakers how to run their machines. None of these definitions is entirely accurate.

Perhaps one man's opinion of his life's work will help to clear up some misunderstanding.

Although a felt service engineer is, in the strictest sense, employed in the felt industry, he is really in the paper business. Companies that manufacture paper machine felts are associated with the textile industry, but since each felt is custom-made to the requirements of a *particular* position on a particular paper machine, they must necessarily work closely with the paper industry. This brings us to the first function of the service engineer.

Engineer Is Interpreter

The service engineer often must be the interpreter between the felt designer and papermakers. There is little standardization of terms. Many papermakers use a term to indicate one condition while another may use the same term to describe something entirely different. Some papermakers refer to a felt as too "tight," meaning it is too close. To the felt designer, "tight" signifies that a felt is too short, that is, it fits the machine too tightly. "Closeness" is related to rate of water removal.

Another term, "blowing," to a felt

LARRY M. WOODSIDE —the requisites for his job add up to experience.

designer refers to a condition which happens only when the felt is new. It is due, at least in part, to its actual newness. There is another operating characteristic, often referred to as "blowing" in the paper mill. This is caused by a felt filling up or becoming hard (usually late in its life), and is related to a tendency to crush.

If the designer knows exactly which condition he is dealing with, it is frequently possible for him to make design modifications to overcome the trouble. The service engineer, cooperating with the papermaker, must be able to recognize what is actually happening to the felt. He must then translate the complete story so the designers can apply their knowledge and skill to make a more suitable felt for that particular position. It is essential, therefore, that the engineer have a papermaking background.

Being familiar with all variables that influence felt performance, he can more accurately interpret the operating conditions to the designer.

In order for the engineer to relay information to the designers, he must also have a good working knowledge of felt manufacture. He need not know all the mechanics of felt making, but should know what one felt design will do under certain conditions, as compared with another. This adds up to experience. Very little is available in print to help him.

The old-fashioned way of approaching a felt problem was to gather the facts, discuss them with designers, and try to correlate the conditions with those encountered in another mill. Now the approach is to discover what makes the felt

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OUTSTANDING PERFORMANCE is only one reason why the leading Pulp and Paper companies continue to place repeat orders for Blaw-Knox Pulpwood Grapples.

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react in a particular manner, in relation to what he knows its behavior should be under similar conditions. This approach requires an over-all theory relating to the operation of the felt; but on the other hand, it has eliminated much guesswork in felt application.

After a number of years, a service engineer starts to analyze felt behavior in general. For example, take a case where a paper mill is having drop-off trouble. If the engineer knows what makes a sheet of board stick to a bottom felt, he can approach the problem from the angle of a basic cure for the drop-off, either by a change in felt design or suggesting slightly different operating conditions on the machine.

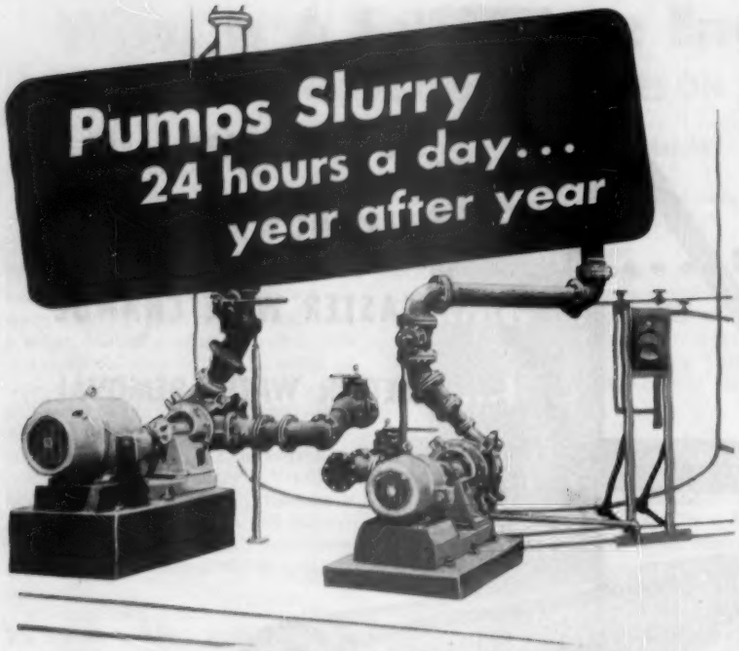
The Need for Service Engineering

There is a definite need for competent service engineering in the paper and felt industries. Although he does not pretend to be an expert papermaker, the engineer, as a felt specialist, can prove himself most valuable to the papermaker. He can often recognize conditions where a slight added expenditure will make a better running machine, or he can advise as to whether or not a proposed large expenditure may be necessary. Many times a service engineer is consulted about installation of new machines and rebuilding of others.

Many times a service engineer can assist a paper mill in improving its operating conditions. A few years ago, in one of the large companies, it was noted that Plate Press felts, having gradually been built up in weight to overcome shadow marking and to improve life, differed only very slightly from a less expensive Super Press design. Felts in the Super Press design were tried and found satisfactory. Today the mill is saving $100 per felt on six different machines.

In another mill producing book papers it was necessary to shut down every three days for a wash-up to maintain quality. After careful study by the engineer, designers and research staff of the felt company, the proper chemical treatment was recommended which made possible felt runs as high as ten days without washing. At $400 per hour down time, this is a good example of how a mill can benefit from service engineering.

All these improvements cannot be exclusively credited to the service engineer. Designers, research and development staff, and other members of the felt making team are important contributors. Then, too, it is the sales engineer in the territory,



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Impeller removed without disturbing the piping. You simply loosen 4 *outside* clamping bolts and pull off the end cover. This feature alone saves considerable time and labor.

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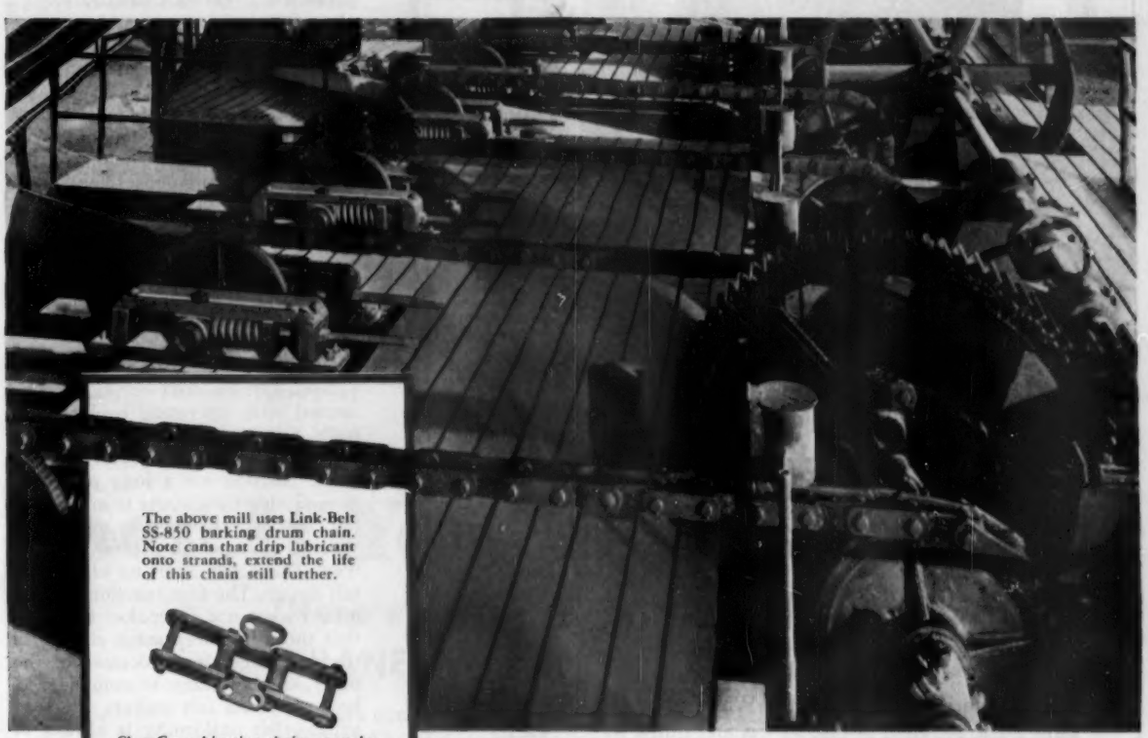
MORRIS *Centrifugal Pumps*

HERE'S the long-lived chain for barking drum service



The above mill uses Link-Belt SS-850 barking drum chain. Note cans that drip lubricant onto strands, extend the life of this chain still further.

Class C combination chain—popular, durable, low-cost design for elevators and conveyors.

Rivetless chain, with its light weight and high strength, is ideal for conveyors.

Class H combination drag chain offers long life for tough refuse conveying. Rigid block links are reversible.

LXS chains are made to close tolerances from carefully selected steels. Ideal for rugged drive and conveyor service.

Specify SS-850 — from LINK-BELT's complete line of chains and sprockets

TO WITHSTAND rough barking drum service, Link-Belt builds extra life into this chain. On SS-850, all wearing surfaces in the joint are hardened, providing hardened surfaces which contact the sprocket. Heat-treated sidebars minimize distortion, preserve press fit throughout the chain's long life. And the sidebars are extra-thick for greater bearing area.

The design and manufacturing requirements that go into SS-850 are typical of the care that Link-Belt gives to every detail of every chain. And, because Link-Belt builds a complete line, you're sure to get the one best-suited to your exact requirements. Ask your Link-Belt representative or distributor for all the facts on Link-Belt chain and sprockets for pulp and paper mill service.

LINK-BELT

CHAINS and SPROCKETS

LINK-BELT COMPANY: Executive Offices, 307 N. Michigan Ave., Chicago 1. To Serve Industry There Are Link-Belt Plants, Sales Offices, Stock Carrying Factory Branch Stores and Distributors in All Principal Cities. Export Office, New York 7; Canada, Scarboro (Toronto 13); Australia, Marrickville, N.S.W.; South Africa, Springs. Representatives Throughout the World. 12.954

You are LOOKING at the business end of a

WARREN Stock Circulating Propeller Type Pump

such as has been specifically engineered to meet the requirements of various leading mills. While many mills have the same basic problem of circulation and quick mixing, either in new or existing chests, yet the cycle of operation and operating conditions usually differs.

Warren engineers are well qualified, through training and many years experience in the Paper Mill field, to logically evaluate your circulation and mixing problems and suggest ways and means of accomplishing desired results. This applies to all chemical stocks, groundwood, half stock in rag mills, or dirty filler stock in board mills. It may involve horizontal rectangular, vertical cylindrical, or any other type of chests.

Whether it is a question of chest circulation, mixing, or any other pumping service in a pulp or paper mill, it will pay you to consult Warren.

Send for Stock Pump Bulletins

WARREN QUIMBY PUMPS

PP21

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC.

Warren, Massachusetts

alert to customer needs, who usually is first to recognize when a mill will benefit from a service engineer's recommendations.

The engineer must participate in research and development carried on by the felt manufacturer. But it is still necessary to do the final testing on a paper machine. He must channel the research on felts into the paper mills. He can usually recognize mills where research can be conducted, and can evaluate results of the research for better guidance of the program.

The same is true of development work. Whether ideas for improvements come from the field or from the manufacturing department is not important. In order that mills receive maximum benefits from such activities, the closest possible cooperation between the sales engineers, the service engineer and the paper manufacturing men is essential.

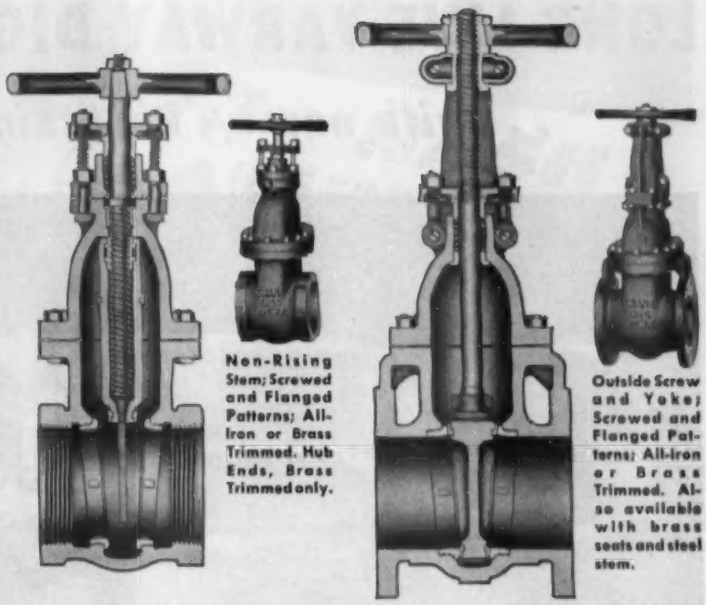
How Mills Have Benefited

Most service engineering is concerned with operating problems in mills. For example, a felt design has been performing satisfactorily on a given position for a long period of time. Suddenly it starts to give trouble. The papermaker has not intentionally changed his machine in any way. There has been no change in felt design. The first reaction of both papermaker and feltmaker is to feel that there has been some change in the manufacturing processes of the other, and both may, to some degree, be correct. As felt makers, we recognize that uniformity is always of major importance, and try to keep felts within close manufacturing tolerances, but some variation is bound to occur. Similarly, in the mill, operating conditions are not precisely the same day to day.

Often the engineer can be helpful simply because "he's not too close to the woods to see the trees." Many improvements are obtained from changes so simple the superintendent wonders why he did not see them himself. The explanation is that the superintendent has a great deal more to look after than a man who comes in primarily to check felt performances.

A Mid West paper mill, with two machines exactly alike, was getting seven days felt life on one machine and ten on the other. They had been trying for months to correct this situation. We first noted the whipper was running backwards, but it was learned that they had recently made this change in an effort to solve the problem. A study of used felts showed they were wearing out on the face side, which is extremely

Crane 125-Pound Iron Body Wedge Gate Valves are an improved design, embodying many features of unusual merit. They set a new peak for quality in iron body wedge gate valves, having greater strength, longer life, and better all-round adaptability for all types of services.



Non-Rising Stem; Screwed and Flanged Patterns; All-Iron or Brass Trimmed. Hub Ends, Brass Trimmed only.

Outside Screw and Yoke; Screwed and Flanged Patterns; All-Iron or Brass Trimmed. Also available with brass seats and steel stem.

See If You Don't Agree!

Here's the big value—the big selection: CRANE 125-Pound Iron Body Wedge Gates

. . . with quality features that assure exactly the kind of service you want. Body and bonnet are oval-shaped with extra metal where it's needed most, to provide liberal strength. Flanged patterns have tie-ribs between body and bonnet flanges. You also get a solid web-type disc with long guides . . . a stem of liberal diameter with long thread engagement . . . an exceptionally deep stuffing box with high-grade packing . . . a two-piece ball-type gland and flange—plus an easy-to-grip handwheel with oval-shaped rim. Non-rising stem valves have a brass bushed stem collar. OS&Y design includes a brass bonnet bushing, swinging eye bolts . . . and a tee-head disc-stem connection on sizes 12-inch and smaller.

Big selection includes all-iron or brass trimmed valves . . . Underwriters' pattern valves, quick-opening types . . . valves for process industries . . . valves for marine service. Sizes up to 48-inch. Check your Crane Catalog or ask your Crane Representative next time he calls.

THE BETTER QUALITY . . . BIGGER VALUE LINE . . . IN BRASS, STEEL, IRON

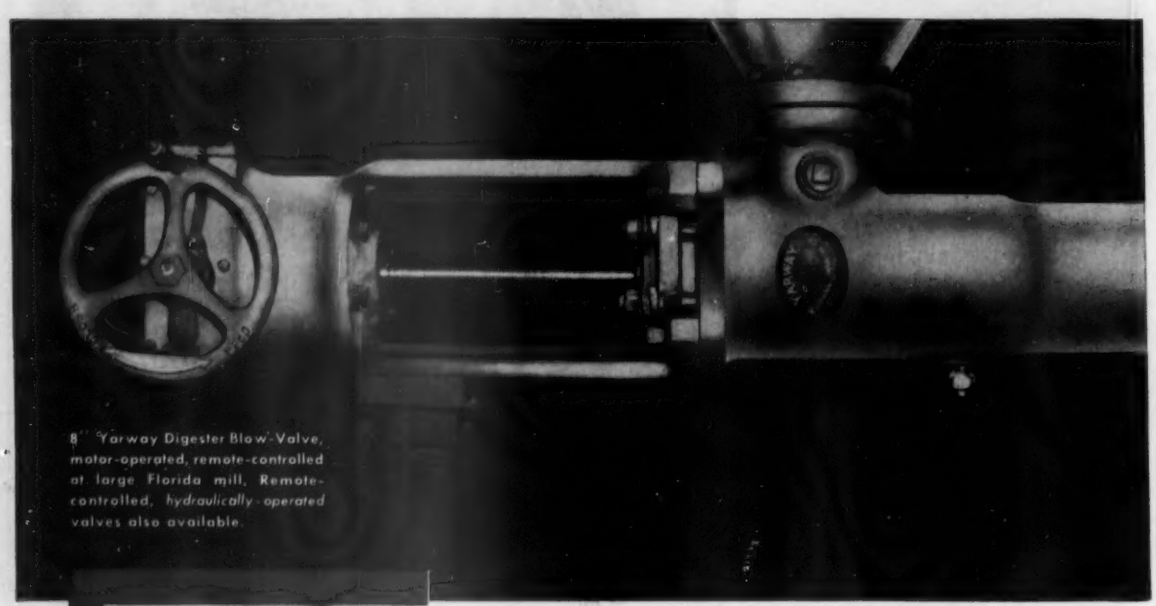
CRANE VALVES

CRANE CO., *General Offices:* 836 S. Michigan Ave., Chicago 5, Illinois
Branches and Wholesalers Serving All Industrial Areas

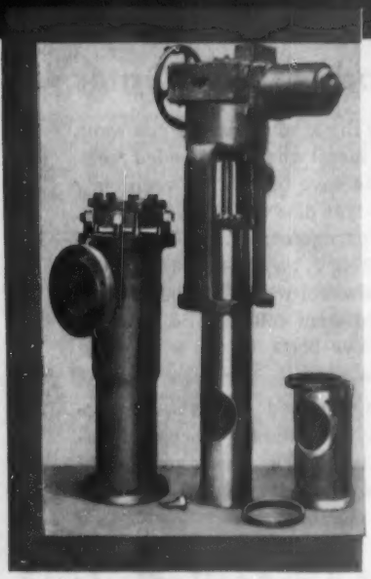
VALVES • FITTINGS • PIPE • PLUMBING • HEATING

LONG LIVE YARWAY DIGESTER VALVES

...with new 17/4 PH Stainless Steel Plungers



8" Yarway Digester Blow-Valve, motor-operated, remote-controlled at large Florida mill. Remote-controlled, *hydraulically*-operated valves also available.



8" Yarway Seatless Digester Blow-Valve ready for assembly.

NEW YARWAY SEATLESS DIGESTER BLOW-VALVES are better than ever . . . because a new type plunger solves the problem of wear and corrosion always present in digester service.

This 17/4 PH Stainless Steel Plunger has corrosion-resistant properties approaching those of chrome-nickel steel. In addition it has a hardness of 400 Brinell. Hard monel split plunger head bushing also contributes to longer life.

Typical experience has been in a large Florida mill. After 23 months service an 8" Yarway Digester Valve was dismantled for inspection. The 17/4 PH plunger *was in perfect condition—not a scratch on it.* In all that time the packing had not been changed or repacked, and there was *no liquor leakage.* Outage time of digesters has been reduced to a minimum.

Want to know more about these Yarway Seatless Digester Valves? Write . . .

YARNALL-WARING COMPANY
103 Mermaid Avenue, Philadelphia 18, Pa.
BRANCH OFFICES IN PRINCIPAL CITIES

YARWAY®

digester blow-valves

rare. Since we could find nothing in the presses or other units which could be wearing out the felts in this way, we started looking for the impossible. It was finally noted that a shower was striking the felt just ahead of a felt roll. Playing the hunch that the water might be passing through the felt and somehow causing wear at this point, the shower was turned so that it struck the felt just after this roll. Felt life immediately equalled that on the other machine.

In a New Jersey mill, short life on a board machine top felt was causing operators to lose sleep. They had been advised to remove the slice boards, which was not possible, of course. We found indications of slippage in the main press. Measurements proved actual slippage amounted to 4.3%. Changing the bearings immediately eliminated this trouble.

Naturally, not all problems are solved so easily. Often, considerable study both by the service engineer and the research and development staff is required.

Perhaps the most important factor in papermaking today is machine efficiency. Here the service engineer plays a very definite role. He can help in speeding up machines by recommending felt designs that will run efficiently at higher speeds. He can advise whether or not such changes can be made profitable without major machine changes. In the final analysis, however, it is only by close cooperation between papermaker and felt maker that improvements in felts can be maintained. Some paper mills hold periodic consultations to review their felt program and to carry on research in new felt designs.

In conclusion, the most important requisites for a competent felt service engineer are a papermaking background, felt making training, and especially *common sense*. Perhaps it can all be summed up by the word "experience."

Karl Clauson Heads Stora Kopparberg Corp.

Karl A. Clauson has been elected president of Stora Kopparberg Corp., of 230 Park Ave., New York City. Its parent company in Sweden lays claim to being the oldest stock company in the world, 600 years old.

Mr. Clauson was a former exec. secretary of the Association of Pulp Consumers Inc., and is now vice president of Parsons & Whittemore Inc., and a director of The Black Clawson Co.

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Produces only ®Clean Air without dust, heat or oil. No oil traps. No dust filters. No after-coolers . . . Ask for Bulletin 374.
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1-Yd. Heavy Duty Crane Makes Bow

TWO YEARS OF RESEARCH have brought forth a new 1-yd. heavy duty high speed shovel crane—the LS 98—at Link-Belt Speeder Corp., Cedar Rapids, Ia., which is expected to fill a special need among pulpwood and other loggers.

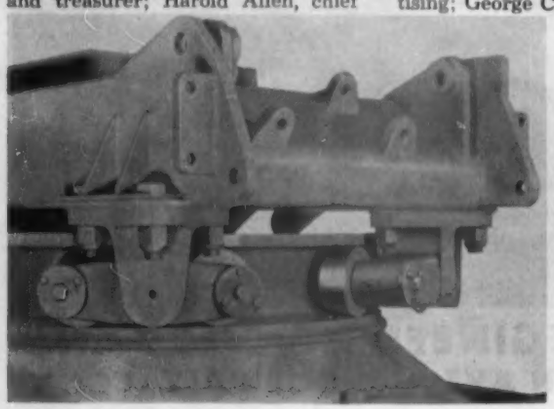
"It bridges the gap between the application and portability advantages of machines up to ¾-yd. size and the output advantages of the larger heavier sizes," Pres. David W. Lehti of Link-Belt Speeder told a PULP & PAPER editor as the new crane rolled out into the paved yard of the L-B plant and took its place for the first time near the middle of a lineup of small to big L-B cranes.

"The need for this size crane has been especially noted in pulpwood logging and other logging," he said.

Over 30 industrial and business editors were given a preview of the L-S 98, even before salesmen and distributors had their show and indoctrination. The preview included a tour of the Cedar Rapids plant and a demonstration by two L-S 98's on a 60-acre proving ground, where they chewed away a hillside at high speed. This is a 53,900 lb. shovel with two speeds, mobility of crane while traveling and the L-S patented Speedomatic hydraulic controls.

Another guest of honor was Robert C. Becherer, president of Link-Belt Co., Chicago, a major supplier of equipment to this industry. He said the new crane should be in demand "because it combines greater capacity with portability." It is said to be unique in that it can be transported easily from job to job without being dismantled.

Many other Link-Belt Speeder officials were present including G. H. (Gus) Olson, vice president-sales; H. L. Hoffman, v.p.-mfg.; Carl M. Basile, v.p.-mfg.; H. E. Kellogg, v.p. and treasurer; Harold Allen, chief engineer; Robert B. Barnes, sales manager; Ed Preston, manager, export sales; Al York, service manager; Ed Karensky, development engineer credited with major role in "inventing" the LS-98. Hosting the party were also Bert V. Jones, director of advertising for all L-B; Emil Weis Jr., L-B Speeder advertising; George Callas, executive v.p., and Bert Hotvedt, v.p. of the advertising agency, Klau-Van Pietersom-Dunlap, Inc.



CONICAL ROTATING hook rollers of new Link-Belt Speeder 98. There are four rotating rollers in front and two in rear. Front rollers are in equalized pairs to spread maximum loads.

Mr. Lehti said the L-S 98 can be profitably productive on scattered operations, as in logging, or in big production jobs." It is new from track to boom tip," he said. "It combines big machine characteristics with small machine advantages."

It can be loaded on flat bed trailer. Track system is so designed as to be self-cleaning—a patent. Easy control in the cab and "foolproof" power steering are features. (For further details, booklets etc., write L-B Speeder, Cedar Rapids).

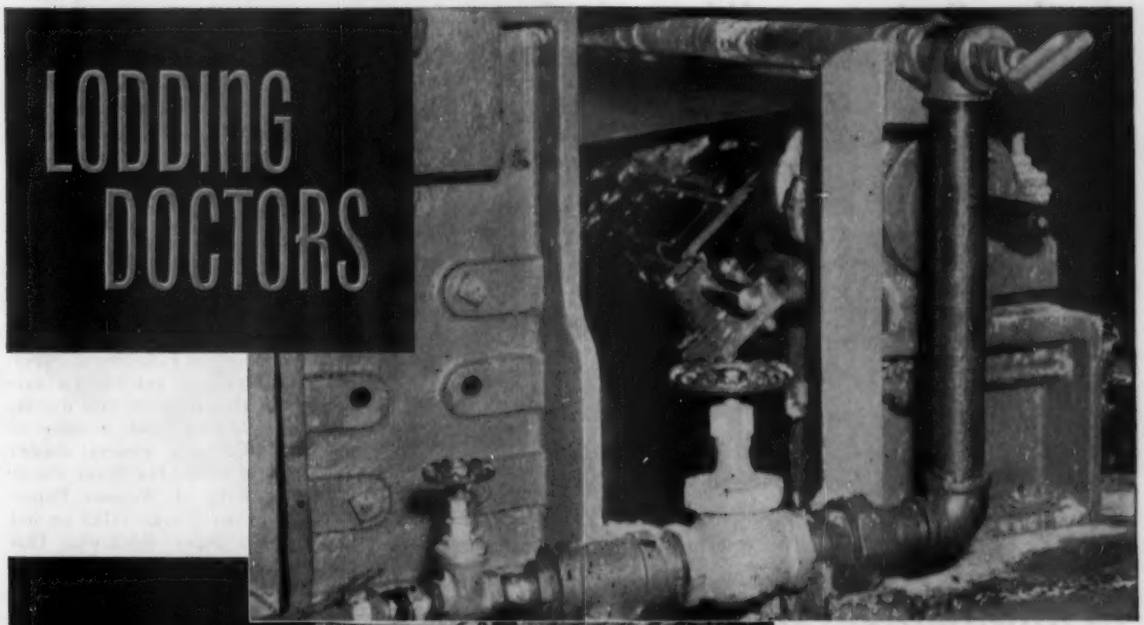
PULP & PAPER learned on this visit that the pulp and paper industry is a major customer of L-B Speeder. One paper company has some 30 of the biggest L-B cranes made—the K-595—90 ft. boom, 80 tons. Another big paper company has gone in for the LS-52 model substantially, having ordered its 6th crane of this size just recently.

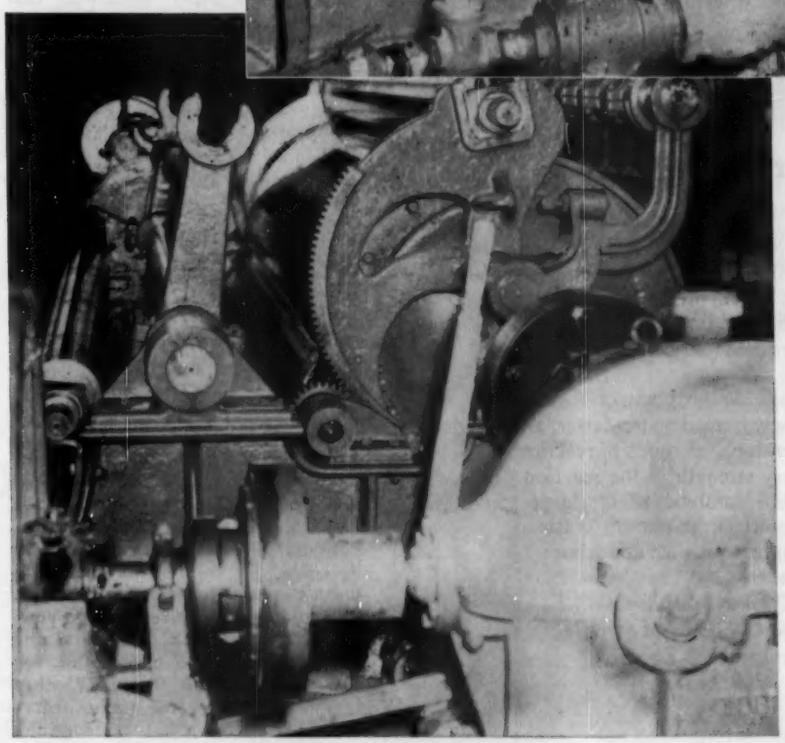
Representative Pulp and Paper Companies—Sales and Earnings—1953

Year ended Dec. 31, 1953, except where another year-end date is shown after the name of the company in left column. Sales and income figures are in thousands of dollars. (Prepared for Pulp & Paper by Cyrus J. Lawrence & Sons, members New York Stock Exchange, from statistical services and published reports. While the figures are believed to be correct no guarantee is given as to their accuracy.)

1953	Net Sales (000)	Income Bef. Taxes $ (000)	% of Sales	Net Income (000)	Net Per Share
Brown Co. (11/30)	$ 67,197	5,661	8.4	$ 3,051	$ 1.04
Puget Sound Pulp & Timber Co.	20,851	n.a.	-	2,890	3.71
Rayonier Incorporated	73,303	19,457	26.5	10,637	4.72
MacMillan & Bloedel Co., Ltd. (9/30)	127,493	22,879	17.9	11,316	2.19
Abitibi Power & Paper Co., Ltd.	109,768	21,429	19.5	10,044	2.27
Consolidated Water Power & Paper	55,491	10,411	18.8	4,318	3.39
Crown Zellerbach Corp. (12 mos. ending 1/31/54)	287,661	51,921	18.0	25,849	3.74
Diamond Match Co.	96,898	6,719	6.9	4,319	3.30
Eastern Corp.	20,869	1,776	8.5	906	2.42
Glatfelter (P.H.) Co.	15,978	3,041	19.0	901	3.91
Great Northern Paper Co.	44,022	9,063	20.6	4,626	4.63
Hammermill Paper Co.	28,862	2,941	10.2	1,541	1.81
Kalamazoo Vegetable Parchment Co. (9/30)	43,848	3,690	8.4	1,802	2.41
Marathon Corp. (10/31)	112,196	11,509	10.3	5,845	1.55
Oxford Paper Co.	53,829	6,500	12.1	3,700	2.88
Warren (S.D.) Co.	46,365	4,644	10.0	2,080	2.04
Champion Paper & Fibre Co. (12 mos. ending 12/31/53)	128,238	n.a.	-	9,878	4.28
Hudson Pulp & Paper (8/31)	40,908	4,715	11.5	2,290	2.04
International Paper Co.	673,508	135,222	20.1	58,543	5.89
Kimberly-Clark Co. (12 mos. ending 1/31/54)	173,736	23,875	13.7	10,383	4.88
Mead Corp.	111,365	12,399	11.1	5,424	4.41
Riegel Paper Co.	43,005	n.a.	-	1,623	3.08
Scott Paper Co.	165,001	25,910	15.7	11,695	3.60
St. Regis Paper Co.	200,334	29,363	14.7	16,157	2.91
West Virginia Pulp & Paper Co. (10/31)	117,652	19,736	16.8	10,736	11.30
Camp Mfg. Co.	24,118	6,118	25.4	3,578	3.44
Gaylord Container Corp.	90,142	16,096	17.9	7,796	2.89
Southern Advance Bag & Paper Co.	19,718	4,701	23.8	2,321	2.62
Southland Paper Mills, Inc.	19,923	7,698	38.6	3,233	7.20
Union Bag & Paper Co.	106,399	20,064	18.9	9,889	5.58
Container Corp. of America	187,553	28,173	15.0	10,128	4.93
Gair (Robert) Co., Inc.	117,297	16,373	14.0	6,452	2.96
National Container Corp.	63,227	7,446	11.8	3,600	1.07
Sutherland Paper Co.	55,752	9,107	16.3	2,957	3.25
Dennison Mfg. Co.	38,613	5,189	13.4	1,957	3.29
International Cellucotton Products	141,712	17,568	12.4	6,856	2.87
Allied Paper Mills Corp.	20,969	1,841	8.8	899	4.78
American Writing Paper Co.	13,055	1,534	11.8	580	2.13

LODDING DOCTORS





From Fourdrinier to Reel— wherever doctors are needed —the paper industry relies on LODDING engineering.

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The Cochrane Solids-Contact Reactor at this Southern paper mill is used for lime softening well water by selective calcium precipitation for process purposes. Total dissolved solids, alkalinity and hardness are all reduced to well within process requirements.

Design of Cochrane Solids-Contact Reactors provide more completely treated water, faster, and at less cost than conventional methods of reaction and settling. High slurry strength in the reaction zone results in optimum catalytic effect; large sludge concentrators result in minimum waste water; automatic desludging saves time and labor; chemical savings are impressive.

For complete details of Cochrane Solids-Contact Reactors, write for Publication 5001-A and reprints on Reactors.

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Big Attendance Seen at Joint Coast Meeting

A "Let's go to Gearhart" drive has attracted wide response to the joint spring meeting of Pacific Tappi and Pacific Coast Superintendents, May 20-22 at Gearhart, Ore., under co-chairmen W. W. Clarke of Longview Fibre Co., and Fred J. Weleber of Publishers' Paper Co.

A discussion featuring kraft mill losses will be headed by L. D. McGlothlin, CZ Camas kraft superintendent. Thomas H. Grant, sulfite superintendent of Publishers' Paper, heads a discussion considering sulfite yields. Papermakers will discuss machine clothing and accessories under Cecil Taylor, general superintendent of Columbia River Paper Mills, formerly of Wausau Paper.

Co-chairman Clarke talks on hot pressing on paper machines; Gus Ostenson, CZ Camas, on effective use of manpower; C. C. Heritage, Weyerhaeuser, on reduction of wood waste; Thomas R. Miles, Portland, Ore., engineer, on chips—saws to cars; Phil Reinmuth, Potlatch Forests, on comparison of log barkers; and Frank A. Guba, Carpenter Steel, on new alloys.

On the lighter side, the International Brotherhood of Migratory Peddlers has arranged a "wake 'em up" breakfast.

Russia Buys Pulp From Three Firms

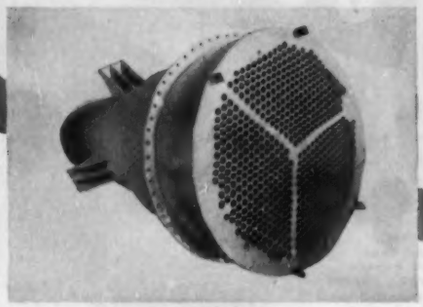
An order for 9000 tons of dissolving pulp for use in manufacture of textiles has been placed by Soviet Russia with three Canadian companies—Canadian International Paper Co., Alaska Pine & Cellulose Ltd. and Columbia Cellulose Co., subsidiary of Celanese Corp of America. It represents about a week's supply from the three firms.

The deal was cleared at high government level in Canada and the U. S., according to information received by PULP & PAPER. Whether it is the first of several similar orders remains to be seen. It is believed the first such business negotiated by this industry with Russia since the war. How delivery will be made has yet to be determined.

Official confirmation was made by PULP & PAPER with a Canadian cabinet member. Spokesman for one of the companies provided details. The CIP share of the business was to be placed through Riordan Pulp Sales division at Montreal. The other two companies are operating in B.C.

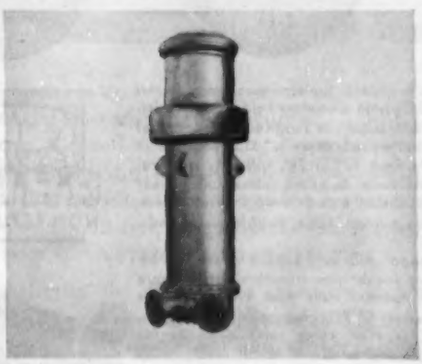
Russia is reported anxious to buy pulp in U.S. and Canada to replace Finnish supply sold to dollar markets.

Here's where costs go DOWN when *Carpenter* Stainless Tubing goes in



Black Liquor Evaporator

2-pass Heater Manifold



2-pass Kraft Heater

Greater freedom from corrosion problems...extended service life . . . lower maintenance costs . . . fewer "down-time" headaches are only some of the many reasons why it pays to install Carpenter Stainless Tubing in heaters, evaporators and other pulp and paper mill equipment you build or use. You'll find that Carpenter gives *more* than corrosion resistance —unexcelled adherence to specifications of finish, dimensions, analysis PLUS ease of fabrication and consistently uniform quality that keeps equipment on the line longer.

Uniform ductility and wall thickness make Carpenter Stainless unusually easy to roll-in—eliminating the retubing problems encountered when "run-of-mill" stainless is used.

There *is* a difference in stainless tubing—and Carpenter makes that difference. Why not let us help you keep production up—down-time down. For your next stainless tubing, call your Carpenter representative. Ask him for engineering and design help in solving your tough tubing problems. When you call Carpenter, you'll find that:

"One Call Does It All".

The Carpenter Steel Company, Alloy Tube Division, Union, N.J.
Branch Offices: Atlanta Chicago Pittsburgh Houston Newark San Francisco

Export Dept.: The Carpenter Steel Co., Port Washington, N.Y. "CARSTEELCO"

Carpenter

STAINLESS TUBING & PIPE

Analysis · Tolerance · Finish

- guaranteed on every shipment

Strapped bundle of logs being stored on stringers in pulpwood "landing."

Strapping Pulpwood Cuts Handling Costs

All you need to cut a big slice off your wood pulp handling costs is one 24-foot piece of Signode Steel strapping, and one Signode anchor plate!

This simple equipment enables you to bundle your logs as they come from the farmers' trucks—a method that means fast, easy handling with minimum labor involved.

Such pulpwood users as the Masonite Corporation use steel strap bundling because of these advantages:

- speeds unloading of farmers' trucks
- induces farmers to make more trips
- ends piece-by-piece handling
- permits better storing in wood yard
- simplifies, speeds loading into cars, barges
- bundles are handled by usual mobile yard cranes
- reduces labor costs materially

Signode fieldmen will be glad to show you how to use these and other time, labor and money-saving methods in the handling and strapping of lumber of all kinds. Write

Draping Signode Steel strapping around bundle of logs as it leaves farmer's truck.

Loading strapped pulpwood on flatcar.

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CORES

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SONOCO

for
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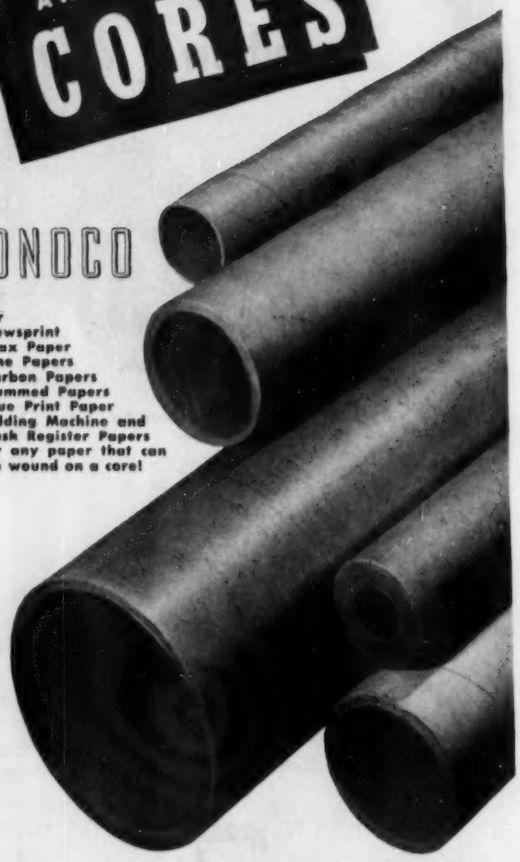
- Carbon Papers
- Gummed Papers
- Blue Print Paper
- Adding Machine and Cash Register Papers
- Or any paper that can be wound on a core!



True precision! Sonoco cores are better cores! Outside diameters held to close tolerance with smooth or rough surfaces, parallel or spiral wound. Sizes ¼" O.D. and up, in lengths from ½" to 24', with any practical wall thickness. Supplied colored throughout or with special outside wrap or inside liners. Can be printed inside, outside or on ends.

RHINO
NON-RETURNABLE

For paper mill use, Sonoco offers the extremely tough non-returnable RHINO core in all standard sizes. Also available is the returnable DURO core with metal ends. These superior cores meet demands for strength and service at lowest cost.

DURO
RETURNABLE

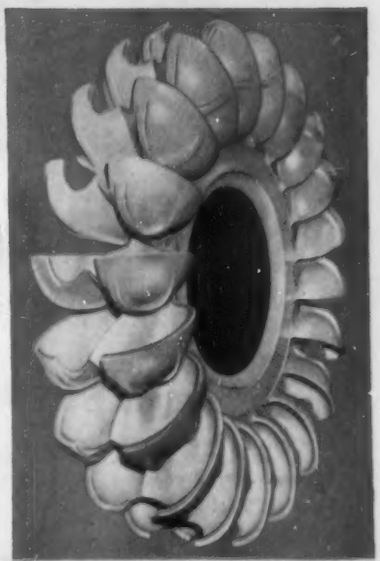
Our complete laboratory and engineering services will work with you in helping to solve your core problems.

SONOCO PRODUCTS COMPANY
MAIN OFFICE—HARTSVILLE, S. C.
MYSTIC, CONN. LOS ANGELES, CAL. BRANTFORD, ONT. LOWELL, MASS.
PHILADELPHIA, PA. AKRON, IND. GARWOOD, N.J. GRANBY, QUEBEC
DEPENDABLE SOURCE OF SUPPLY

Finishing a 140,000 H.P. impulse turbine runner for Kemano, the powerhouse which will feed the Aluminum Co. of Canada's new aluminum plant at Kitimat, on Canada's west coast.

High Efficiency... Reliable Performance

DOMINION *Impulse* TURBINES



The experience and the resources (including complete design, engineering and laboratory testing facilities) of both Dominion Engineering Company Limited and Neyrpic, Grenoble, France, are combined to produce Dominion Impulse Turbines—resulting in high efficiency designs for a wide range of specific speeds to suit a great variety of operating conditions. These include single jet horizontal and multi-jet horizontal and vertical arrangements.

The quality of the design, the selection of proper material and the precisely correct degree of finish are among the essential factors which assure reliable performance and absence of serious pitting at high specific speed. Your inquiries are invited.

DOMINION ENGINEERING
COMPANY LIMITED

MONTREAL, CANADA

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CABLE: DOMWORKS

Champion's Art Wilson Mayor of Hamilton

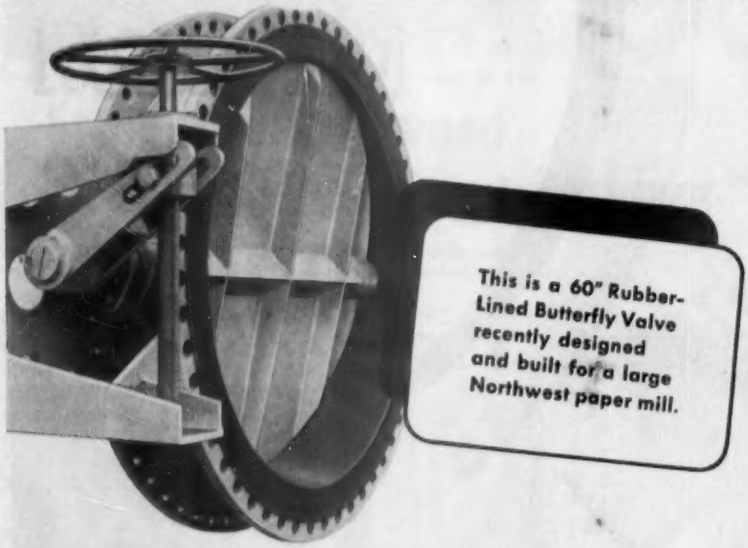
Arthur H. Wilson, of Champion Paper & Fibre's No. 2 machine room office in the Hamilton, O., division, is serving his first year as mayor of Hamilton and his fifth year on its city council. Hamilton, 60,000 population, was one of 11 cities rated top for citizenship and progress by National Municipal League and *Look*.

Bryant at Atenquique

William W. Bryant, formerly in the Southern pulp and paper industry, is serving as general superintendent at the kraft pulp and board mill of the Industrial Company of Atenquique, Atenquique, Jalisco, Mexico.

WANTED: Pulp and Paper Machinery Manufacturer's Agent or Representative for the Pacific Coast. Reply to Box 179, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

WANTED—POSITION IN SALES OR EXPORT. Just back from 2½ years abroad in North Africa and nearly all nations in Europe. Know languages. Engineer and technician in two Pacific Coast mills previously. Operated own supply business. Write Route 2, Box 649, Tacoma, Wash.



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MODERN FACILITIES...

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Stainless Steel Valves
Steck Valves
Stainless Steel Fabrication
Stainless Steel Fittings
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Copper Smithing
Lead Linings
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NORTHWEST COPPER WORKS, Inc.

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POSITIONS OPEN

We can place—Managers, supts. and asst. supts. for Fourdrinier and Cylinder machine mills; 2 technical directors; Fourdrinier and Cylinder machine foremen; chemists and chem. engineers for mills, also for demonstrating and selling.

Master mechanics, plant engineers, designers, draftsmen and power plant supervisors; head shipper; finishing foremen (2); salesmen for machinery, starches and belting; machine tenders and back tenders.

If you are available for a position in paper or pulp mfg. or paper converting, SEND US YOUR RESUME. It will be in confidence. No charge unless you accept employment through our service.

CHARLES P. RAYMOND SERVICE, INC.
Phone: LIberty 2-6547
294 Washington St. Boston 8, Mass.

TECHNICAL DIRECTOR

For new and expanding pulp mill

Chemical engineering graduate with at least ten years' experience in the manufacture of bleached kraft pulp and high grade white papers. Must have had enough experience in directing technical work in these fields to qualify him to assume full responsibility for the management of Technical Department. This would include the supervision of laboratory, quality and process control, process and product development.

All replies will be kept in strict confidence. Please make your resume as complete as possible and furnish recent photograph. Our employees know about this advertisement. Reply to Box 175, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

GROWING PULP AND PAPER MILL in North Carolina has opening for mechanical engineer to take charge of all plant maintenance. Please include summary of background and experience with reply. Write Box 180, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

PAPER CONVERTERS NOTE:

WOULD YOU LIKE A PERMANENT CLOSE MILL CONNECTION with a cylinder machine mill in the Middlewest on specialty products, including various types of the highest grade boxboards, both coated and uncoated. If so, write at once for particulars to Box 174, PULP & PAPER, 370 Lexington Ave., New York 17, N. Y.

WANTED

MECHANICAL DESIGN ENGINEERS for plant layout and automatic machine design. Positions entail wide range of engineering work, some electrical. Experience in pulp, paper or wallboard plants desirable but not necessary. Reply giving complete details of experience and training. Opportunities for advancement. Salary to start $5,000-$7,000 depending on age and experience. Location South. Reply Box 173, PULP & PAPER, 370 Lexington Ave., New York 17, New York.

WHAT WENT UP IN SMOKE NOW GOES UP IN HOMES

DOWNINGTOWN HARDBOARD MACHINES HELP CONVERT LUMBER BY-PRODUCTS INTO PROFITABLE BUILDING MATERIAL

Downingtown Fourdrinier-Type Hardboard Forming Machines and Press Sections are playing an increasingly important role in a great new industry. Bark, slabs, chips and other lumber manufacturing by-products, which were once burned, are now being successfully and economically converted into hardboard for American homes. Pulp mills also use Downingtown Hardboard Machines to manufacture hardboards from available stands of hardwood, undesirable for pulp.

Downingtown Hardboard Machines are now operating in several important lumber producing areas and quickly repaying their costs in the profitable utilization of what was once "waste" material. Similar Downingtown machines are built to produce insulation and wallboards of all types.

A Downingtown Sales Engineer will be glad to discuss any of these machines with you. Or write for Bulletin 549.

DOWNINGTOWN MANUFACTURING CO.
DOWNINGTOWN, PA.

West Coast Representative: John V. Roslund, Pacific Building, Portland 1, Oregon

DOWNINGTOWN
DESIGNERS AND BUILDERS OF PAPER BOARD AND FELT MACHINES SINCE 1880
MODERNIZATION IS PROFITABLE

NPTA SPRING CONVENTION

J. R. KIMBERLY (left), President of K-C and APPA Vice Pres., foresaw a bright future for paper business at NPTA meeting in New York. At right, representing paper manufacturers in discussion of supplier preference survey; JACK MULHOLLAND, Sales Mgr., Crossett Paper Mills, GEORGE STUHR, Sales Mgr., Southern Kraft Div., IP, WILLIAM SERVOTTE, Vice Pres., Gen. Mgr., Bay West Paper Co., G WILLING PEPPER, Vice Pres., Industrial Sales, Scott Paper.

How Paper Manufacturers Can Help Merchants Is Presented by NPTA

WHAT PAPER manufacturers should do to make it a happier world for paper merchants was analyzed by questionnaires and discussed at National Paper Trade Assn's. spring convention in New York. Considerable comment on sales policies, cash discounts, etc., was unleashed when results of two surveys among distributors were released.

J. R. Kimberly, president, Kimberly-Clark, and APPA vice president, asserted a belief in the bright future of paper business. Jumping to conclusions can be expensive and disastrous, he warned as he recounted the story of a fellow asleep in the pullman car when it stopped in a tunnel. Failing to turn on the lights, he concluded he was blind. "We can be just as wrong when we jump to conclusions regarding a recession," said Mr. Kimberly.

Harold L. Zellerbach, president, Zellerbach Paper Co., at the wrapping paper session, urged closer cooperation between manufacturer and distributor. He told merchants one good manufacturer is worth 20 customers and what each group wants from the other is an honest sales program. Mr. Zellerbach said they should talk the industry up, not down.

Congressman J. K. Javits of New York, attorney for NPTA, urged greater interest in activities of congressmen and senators. He said American economy for the long term is sound and the short term will be influenced by what this congress does.

What Do Merchants Want?

Ten most desirable qualities a merchant seeks in his suppliers were discussed at the wrapping paper session. Manufacturers were defended by J. C. Mulholland, Crossett Paper Mills, George Stuhr, International Paper, William Servotte, Bay West Paper, and G. Willing Pepper, Scott Paper. From a selection of 20 qualities, here's what 255 members considered most important:

1. Quality of product.
2. Clearly defined sales policy protecting merchants.
3. Fair and adequate allotments in tight markets.
4. Reasonable suggested resale schedules.
5. Exclusive or limited competing outlets based on potential.
6. 2%—30 days—cash discount terms.
7. Prompt shipments from low freight point.
8. Sales helps, sample books, merchandising programs.
9. Floor stock protection against price drops.
10. Complete rounded line, as needed by customer, which may be combined for larger shipments.

Fine paper merchants conducted a panel and survey, too, with manufacturers taking part. Some things they wanted:

1. Fair cash discounts.
2. Suggested resale prices.
3. Avoidance of too many outlets.
4. Prompt replies to inquiries.
5. Assurance a manufacturer

Continued on page 131

Designed to Trim your Trimming Costs!

86" Model E. Undercut Trimmer showing side loading table. Loading table and air for floating pile are optional equipment.
SMITH & WINCHESTER
MODEL E
UNDERCUT TRIMMER
with Side Loading Table

Designed to Cut Trimming Costs

The S & W Model E Undercut Trimmer meets the needs of the modern finishing department for high production, accuracy and safe operation. For years the Standard Undercut Trimmer and the Model E have been giving outstanding service in the leading plants of the country.

Now, we offer the Model E with side loading table and air for floating pile, for fast, straight line operation, ease of handling stock and increased efficiency. The Model E is built in 56", 66", 76" and 86" widths.

WRITE FOR BULLETIN!

The SMITH & WINCHESTER *Manufacturing Company*
SOUTH WINDHAM, CONN.

HAM FELTZ says:

"Old Egypt's slaves were out of luck;
They had no straw; the wet bricks stuck
Before the sun could bake them dry
Beneath the redhot desert sky.

"Yes, they were up against it as truly as a modern manufacturer of paper or board would be without wool felts to keep his sheet from sticking.

"Only last week I saw a machine running board from the wet end to the heated dryers without passing through a number of presses. He could not have operated without wool felts.

"Most mill superintendents seem to *prefer* Hamilton Felts. They tell me that Hamilton Felts, with large open spaces between threads, remove more water and their thick, soft nap filters out all loose fibers and give finer finish to their sheets.

"You will never get stuck with Hamilton Felts."

SHULER & BENNINGHOFEN

HAMILTON, OHIO

MIAMI WOOLEN MILLS *Established 1858*

Hamilton Felts

NEW "RUBBER SEATING" FABRI-VALVE

For Low Cost

ORIGINAL INSTALLATION AND REDUCED MAINTENANCE

New neoprene rubber seats eliminate "lip" area, thus preventing build-up or deposits. Rubber seats press tightly together when gate is open, insuring smooth flow of heavy solutions. Collection of stock fibers in chest area kept to an absolute minimum. Seating is easy to inspect while valve is in the line. The *only* stock valve to offer all these features:

- Lower original cost... cheaper to ship and install.
- Fabricated from stainless steel, monel or any alloy combination.
- Positive shutoff of normal flow or back pressure.
- Free flow from port to port... nothing for stock to "hang up" on.
- Sealed chest keeps collection of stock fibers in chest area to an absolute minimum.
- Special neoprene rubber seating prevents wear and galling on gate.
- Rubber seats can be inspected or replaced while valve is in the line.

Write or call for information or estimate

TRADE MARK

FABRI-VALVE

COMPANY OF AMERICA

2100 N. Albina Avenue, Portland 12, Oregon

SOUTHERN CORPORATION — Charleston, S. C., Distributor for Eastern and Southern area

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Efficient Design
Careful Accurate Fabrication

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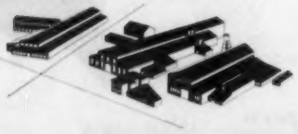
The most important steps in modernization or expansion of your



BLACK LIQUOR EVAPORATOR INSTALLATIONS

GOSLIN-BIRMINGHAM MANUFACTURING CO., Inc.
BIRMINGHAM, ALABAMA
CHICAGO: F. M. deBoers and Associates, 20 North Wacker

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Hot Acid Cooking and Recovery Systems
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and Wood Preparation

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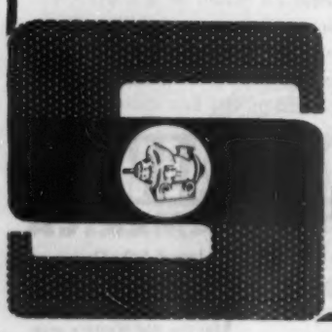


proven by performance

Sutherland Breaker Trap

SUTHERLAND REFINER CORPORATION

TRENTON 8, NEW JERSEY

How Manufacturers Can Help Merchants

Continued from page 128

won't take over accounts originated by merchants.

6. Better handling of complaints.

7. Supplying sufficient sales aids: advertising, samples, etc.

8. More certainty as to a mill's selling policy.

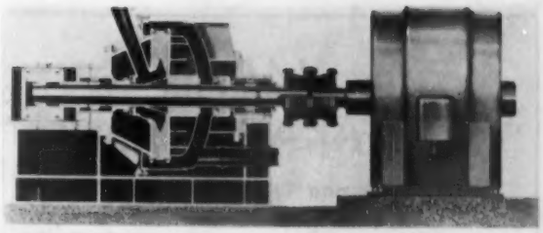
9. Fair, adequate allotments in tight markets.

10. Protection from adverse effects of job lots and seconds.

Merchants asked mills to restore 3% terms. The manufacturers' panel argued that they are selling paper—not terms, and are willing to pay for a quick return of their money. They stressed that their investment extends from the time they purchase wood. Merchants asked for suggested resale schedules to create confidence in salesmen. Mills were criticized for not training more inside men.

NEW BAUER REFINER

FOR MORE INFORMATION on this Bauer Refiner No. 440, write to H. E. GINAVEN, Vice Pres., The Bauer Bros., 1706 Springfield Ave., Ohio.



Bauer Offers New Pump-Through Refiner

The Bauer Bros. Co., announces a new refiner, 14th in its extensive line of revolving disc mills, ranging from 2 hp to 800 hp, designed to fill disc mill requirements by embracing both double and single revolving disc types, with precision machines for exacting jobs, and less precise units for rough fiber break-down.

The new refiner, No. 440, is designed especially for stock preparation. It incorporates several radical departures from conventional design, especially in that it is fed and discharged under pressure.

No. 440 has a rotating 44 in. disc driven through coupling by any standard slow speed motor (usually 400 to 514 rpm) in the range of 450 to 750 hp.

Write The Bauer Bros, 1706 Sheridan Avenue, Springfield, Ohio, for more details, illustrations, etc. Ask for information on Refiner No. 440.

Inquiries may be addressed to H. E. Ginaven, vice president, The Bauer Bros.

Engineering Service – Always Available

WHEN YOU USE SWENSON LIME MUD FILTERS

It's good to know there's a Swenson Engineer *always* on hand to help you get the most out of your Swenson equipment. For example, when you use a Swenson Filter in your lime mud filtering operation your Swenson Engineer will show you how to obtain low soda losses and yet have a high percentage of solids in the cake discharge from the filter. He'll help you with any and all problems and there's no charge for his services. So ask for experienced Swenson Engineering Service in the *planning* stages and be assured of *continuous*, competent service for the entire lifetime of the equipment.

SWENSON EVAPORATOR CO.

15632 Lathrop Avenue, Harvey, Illinois

SWENSON

Proved Engineering for the Process Industries

SINCE 1889

A Division of WHITING Corporation

Pulp Washers • Evaporators
Filters • Digester Blow Condensers
Turpentine Condensers

Serving JAPAN
C.T. TAKAHASHI & CO.

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All Grades of Pulp

Pulp and Paper Mill Machinery and Supplies

Preliminary Reports, Layouts, Estimates and Designs for Kraft, Sulfite, Dissolving and Semi-Chemical Pulp Mills, Paper and Board Mills.

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"Puget Sound"

CAN HANDLE THE JOB

—If it's custom fabricated of metal up to one inch in thickness!

Shown at right is a typical example of PSSM custom plate fabrication for the pulp and paper industry—section of stainless piping for handling corrosive liquids.

Free illustrated brochure on request.

PSSM SINCE 1906 *Plate Fabricators for Industry*

PUGET SOUND SHEET METAL WORKS

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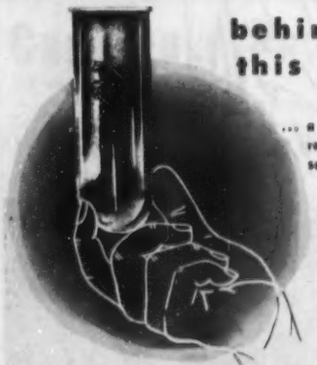

behind this trademark...

... a nationally recognized, independent, research organization - to help you solve all your felt problems.

The quality being built into Appleton Felts today is predicated very largely on the work of this research laboratory organization.

appleton felts make good paper

APPLETON WOOLEN MILLS APPLETON • WISCONSIN

RAY SMYTHE

Pulp and Paper Mill Machinery and Supplies

REPRESENTING:

RICE BARTON CORP. — HEPPENSTALL CO.
SHENANGO-PENN MOLD CO.
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SMYTHE MULTIVAT FLAT SCREENS
CARTHAGE MACHINE COMPANY
HORTON MANUFACTURING CO., INC.
SUTHERLAND REFINER CORP.
PULP REFINING SYSTEMS

501 PARK BUILDING, PORTLAND 5, ORE.
Beacon 0502 & 2238

proven by performance

The Sutherland Refiner complete continuous Beating and Refining Systems.*

SUTHERLAND REFINER CORPORATION

*U. S. Patent No. 2,654,295

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Positive Flow Non-Clogging GOULDS

CENTRIFUGAL PUMPS for STOCK-HANDLING

Deckers

Washers

Thickeners . . .

or other Services in the Modern Paper Mill

Consult WADE FOR PUMPS

Our Complete Line of Pumps Includes:

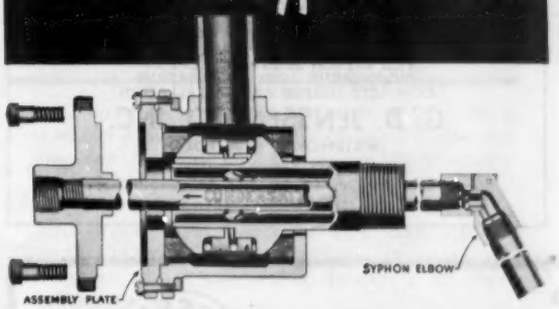
- PEERLESS
- GOULDS
- BARNES
- GARDNER-DENVER
- WESTINGHOUSE Motors & Control Equipment

OUR SERVICE DEPARTMENT *stands ready to serve you in your pump equipment needs regardless of make of pumps.*

R·M·WADE & CO. SINCE 1865

PORTLAND 9, Ore. • SEATTLE 4, Wash.

NEW Type JP Johnson Joint with Syphon Elbow



In the picture above you see a combination of welcome new ideas for the paper industry. It is built around the new Johnson Joint, which has been redesigned for lighter weight, lower cost, longer operating life. There's a special assembly plate to hold internal parts in position when the head is removed to get at the syphon pipe. And the syphon elbow is new altogether. It permits the use of straight pipe for the syphon connections, forms a tight seal when in position, and can be inserted or withdrawn right through the joint body, in many cases while the machine is operating.

Write For Full Details

THE JOHNSON CORPORATION

849 Wood St., Three Rivers, Michigan

PLANT ACCIDENTS SPELL HEAVY LOSSES AND HIGH INSURANCE COSTS

End both with

ALGRIP

ALGRIP Abrasive Rolled Steel Floor Plate literally pays for itself in lower insurance premiums. Installed wherever footing is hazardous, ALGRIP stops slipping accidents once and for all—*stays* non-skid even when wet or splashed with oil . . . even on steep inclines!

Hundreds of tiny abrasive particles impregnated *to a controlled depth of penetration* into tough, lightweight steel plate give ALGRIP a "grinding-wheel" grain surface that takes a firm grip at every footstep. ALGRIP's gripping surface never becomes smooth because hard wear only exposes new abrasive particles . . . an exclusive ALGRIP safety feature.

Investigate ALGRIP now. You'll find, as countless other plants have found, that ALGRIP foot safety pays for itself in savings on insurance costs. Write today for full details. There's no obligation.

A.W. ALGRIP

Abrasive Rolled Steel Floor Plate

UL

ALAN WOOD STEEL COMPANY

CONSHOHOCKEN, PA.

Please send Booklet AL-38 on cutting costs with ALGRIP.

Name_____ Title_____

Address_____

City_____ Zone____ State_____

The *Sandy Hill* CREED

To keep informed on the problems of paper and pulp making; and

To engineer, develop and produce constantly better equipment to meet those problems...

The SANDY HILL Iron & Brass Works

Hudson Falls, N.Y.

OWEN PULPWOOD GRAPPLES

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Branches: BREAKWATER AVENUE • CLEVELAND, OHIO
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JENSSEN AUXILIARY PROCESS TOWERS
RECOVERY PLANTS—COOKING ACID

SOLUBLE BASE ACID PLANTS

JENSSEN SO_2 ABSORPTION SYSTEMS
FOR BLEACH PLANT APPLICATION
SULPHUROUS ACID PREPARATION
COMPLETE DESIGN AND INSTALLATION

G. D. JENSSEN CO. INC.

WATERTOWN, NEW YORK

Western Representative:
James Brinkley Co., 417-8th Ave. So., Seattle, Wash.
FOUNDED 1915

proven by performance

PRESSURE WASHING

Sutherland Inc. Pressure Washing* Sold and Serviced by

SUTHERLAND REFINER CORPORATION

TRENTON 8, NEW JERSEY

*U. S. Patent No. 2,355,091

HERMANN *Improved* CLAFLIN

"Continuous Beater & Refiner"

"Continuous" Beating-Refining Kraft Pulps for Multiwall Bag, Gumming & Kraft Specialties.

Waxing Tissues

Glassine & Grease-Proof Grades

Facial Tissue

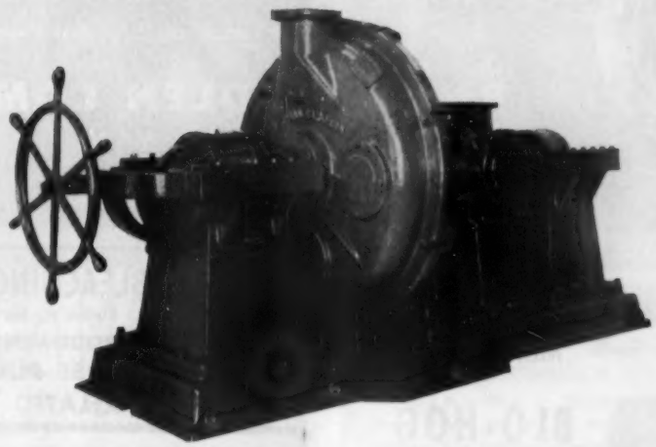
Rag-Cotton Linters

Deinked Stock

Filler Stock

Liner Stock

"Cycling"



"Hot Brown Stock" Blow Tank to CLAFLIN direct to the Washers

"Asplund Fibre" .009 Corrugating

"Chemipulper" "Defibrator Stock" Roofing Felt

"Neutral Sulphite" .009 Corrugating

"Knotter-Screen Rejects"

Straw-Bagasse

Four Size Units Including No. 0 For Laboratory-Test Purposes.

NOW AVAILABLE: NEW NO. 3 HEAVY DUTY UNIT WITH TANGENT HEAD FOR DEFIBERING HOT BROWN STOCK. REQUIRES LESS THAN 1-H.P. PER TON.

THE HERMANN MFG. CO. LANCASTER, OHIO

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By changing to Oakite Composition No. 92, a specially designed steam-gun cleaning compound, one New England mill now saves 170 manhours in cleaning a paper machine.

Because of more powerful Oakite detergent action, even heavy soils of long standing are thoroughly removed. Dirt, grease, grime as well as slime, pitch and sizing disappear in short order.

New 29-page illustrated booklet describes modern methods for speeding up *all* your mill maintenance. Gladly mailed FREE on request. Write: Oakite Products, Inc., 58C Rector Street, New York 6, N. Y.

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Highest Screening Capacity

With their improved SLOT DESIGN **Fitchburg NEW TYPE-DUPLEX SLOT** Screen Plates have proven the HIGHEST CAPACITY plates made.

They are nearest to "self-cleaning" due to the special design milled slots. Require LESS "wash-ups." Maintain highest capacity all day—every day.

Give you up to ⅛ more screened stock: Pulp, Paper or Board.

FITCHBURG
Screen Plate Co., Inc.
301 South St., Fitchburg, Mass.

Cast Bronze Plain or Chrome Plated

"EXCELSIOR" FELTS

The Trademark of Felts of Superior Quality
for Every Grade of Pulp and Paper

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CAMDEN, MAINE
Pacific Coast Agents
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Patents Pending

The Marvelous Montgomery

BLO-HOG

(The only all-purpose hog in the world)

Eats Up Everything!

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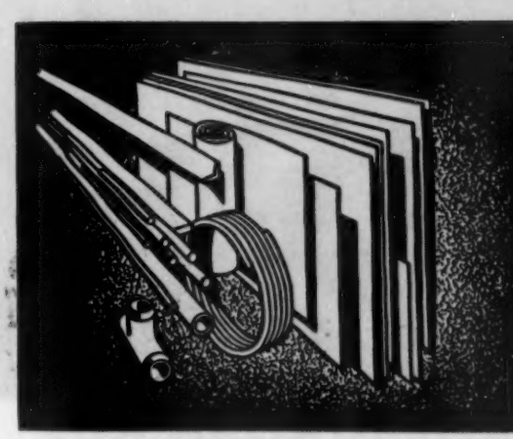

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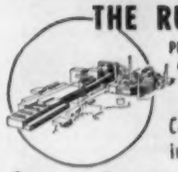

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